Analytical Data Package Prepared For

Pacific Northwest National Lab

Radiochemical Analysis By

STL Richland STLRL

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Data Package Contains Pages

Report Nbr: 34341

J6L140107-3

J6L140110-1

CLIENT ID NUMBER LOT Nbr WORK ORDER RPT DB ID **BATCH** J6L130210-1 JLDVP1AA 9.ILDVP10 6353645 J6L130210-2 JLDVW1AA 9JLDVW10 6353645 J6L130210-3 JLDV11AA 9JLDV110 6353645 J6L130210-4 JLDV31AA 9.JLDV310 6353645 J6L130210-5 JLDV41AA 9JLDV410 6353645 J6L130210-6 JLDV81AA 6353645 9.JLDV810 J6L130210-7 JLDWG1AA 9JLDWG10 6353661 J6L130210-7 JLDWG1AC 9.JLDWG10 6353646 J6L130210-7 JLDWG1AD 9JLDWG10 6353645 JLFPN1AA J6L140107-1 9.JLFPN10 6353645 J6L140107-2 JLFPP1AA **9.JLFPP10** 6353645 J6L140107-3 JLFPQ1AA 6353650 9JLFPQ10 J6L140107-3 JLFPQ1AC 6353651 9JLFPQ10

9JLFPQ10

9JLFP210

6353645

6353647

JLFPQ1AD

JLFP21AA

Comments:

SDG Nbr

W05078

ORDER Nbr

B1LC.I0

B1LCF3

B1LD00

B1LD05

B1LCY5

B1LCX5

B1LCY0

B1LCY0

B1LCY0

B1LD15

B1LD20

B1LD10

B1LD10

B1LD10

B1KPP2

S07-012

S07-010

Report Nbr: 34341

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W05078	S07-010	B1KPP2	J6L140110-1	JLFP21AC	9JLFP210	6353650
	W07-011	B1L646	J6L140151-1	JLF2P1AA	9JLF2P10	6353647
		B1L646	J6L140151-1	JLF2P1AC	9JLF2P10	6353650
		B1L646	J6L140151-1	JLF2P1AD	9JLF2P10	6353651
		B1L646	J6L140151-1	JLF2P1AE	9JLF2P10	6353657
		B1L646	J6L140151-1	JLF2P1AF	9JLF2P10	6353655
	I07-010	B1L279	J6L140156-1	JLF3X1AA	9JLF3X10	6353659
		B1L279	J6L140156-1	JLF3X1AC	9JLF3X10	6353661
		B1L279	J6L140156-1	JLF3X1AD	9JLF3X10	6353655
		B1L2C8	J6L140156-2	JLF341AA	9JLF3410	6353659
		B1L2C8	J6L140156-2	JLF341AC	9JLF3410	6353661
		B1L2C8	J6L140156-2	JLF341AD	9JLF3410	6353655
	107-006	B1KYJ3	J6L140161-1	JLF421AA	9JLF4210	6353647
		B1KYJ3	J6L140161-1	JLF421AC	9JLF4210	6353661
	I07-011	B1L309	J6L140170-1	JLF621AA	9JLF6210	6353645
	S07-012	B1LCX0	J6L140251-1	JLGW51AA	9JLGW510	6353646
		B1LCX0	J6L140251-1	JLGW51AC	9JLGW510	6353645
		B1LCD3	J6L140291-1	JLG7H1AA	9JLG7H10	6353645
	107-009	B1L1X9	J6L180168-1	JLPE31AA	9JLPE310	6353662
		B1L1X9	J6L180168-1	JLPE31AC	9JLPE310	6353654
		B1L1X9	J6L180168-1	JLPE31AD	9JLPE310	6353657
		B1L1X9	J6L180168-1	JLPE31AE	9JLPE310	6353659
		B1L1X9	J6L180168-1	JLPE31AF	9JLPE310	6353661
		B1L1X9	J6L180168-1	JLPE31AG	9JLPE310	6353655



STL Richland

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Certificate of Analysis

Pacific Northwest National Laboratories Sigma V Building Richland, WA 99352

January 27, 2007

Attention: Dot Stewart

SAF Number : S07-012, S07-010, W07-011, I07-010, I06-006,

IO7-011, IO7-009

107-011, 107-009

Date SDG Closed : December 14, 2006 Number of Samples : Twenty (20)

Sample Type : Water SDG Number : W05078

Data Deliverable : 45-Day / Summary

CASE NARRATIVE

I. Introduction

Between December 11, 2006 and December 14, 2006, twenty water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

PGW ID#	STLR ID#	DATE OF RECEIPT	MATRIX
B1LCY0	JLDWG	12/11/06	WATER
B1LCX5	JLDV8	12/11/06	WATER
B1LCY5	JLDV4	12/11/06	WATER
B1LD05	JLDV3	12/11/06	WATER
B1LD00	JLDV1	12/11/06	WATER
B1LCF3	JLDVW	12/11/06	WATER
B1LCJ0	JLDVP	12/11/06	WATER
B1LD10	JLFPQ	12/12/06	WATER
B1LD20	JLFPP	12/12/06	WATER
B1LD15	JLFPN	12/12/06	WATER
B1KPP2	JLFP2	12/12/06	WATER
B1L646	JLF2P	12/12/06	WATER

B1L2C8	JLF34	12/12/06	WATER	
B1L279	JLF3X	12/12/06	WATER	
B1KYJ3	JLF42	12/12/06	WATER	
B1L309	JLF62	12/12/06	WATER	
B1LCX0	JLGW5	12/13/06	WATER	
B1LCD3	JLG7H	12/13/06	WATER	
B1KPD6	JLPEJ	12/14/06	WATER	
B1L1X9	JLPE3	12/14/06	WATER	

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Alpha Spectroscopy

Neptunium-237 by method RICH-RC-5009

Uranium 234, 235 and 238 by method RICH-RC-5039

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014 Gross Beta by method RICH-RC-5014 Strontium-90 by method RICH-RC-5006

Gamma Spectroscopy

Gamma Spec (LL) by method RICH-RC-5017 Iodine-129 (LL) by method RICH-RC-5025

Liquid Scintillation Counting

Enriched Tritium by method RICH-RC-5024 Technetium-99 by TEVA method RICH-RC-5065

Tritium by method RICH-RC-5007 Carbon-14 by method RICH-RC-5022

Laser Induced Phosphorimetry

Total Uranium by method RICH-RC-5058

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy

Neptunium-237 by method RICH-RC-5009:

The LCS, batch blank, samples and sample duplicate (B1L1X9) results are within contractual requirements.

Uranium 234, 235 and 238 by method RICH-RC-5039

The LCS, batch blank, samples and sample duplicate (B1LCX0) results are within contractual requirements.

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014:

The LCS, batch blank, samples and sample duplicate (B1LD10) results are within contractual requirements.

Gross Beta by method RICH-RC-5014:

The LCS, batch blank, samples and sample duplicate (B1L646) results are within contractual requirements.

Strontium-90 by method RICH-RC-5006

The LCS, batch blank, samples and sample duplicate (B1LCY0) results are within contractual requirements.

Gamma Spectroscopy

Gamma Spec (LL) by method RICH-RC-5017:

The LCS, batch blank, samples and sample duplicate (B1L1X9) results are within contractual requirements.

Iodine-129 (LL) by method RICH-RC-5025:

The LCS, batch blank, samples and sample duplicate (B1L2C8) results are within contractual requirements.

Liquid Scintillation Counting

Technetium-99 by TEVA method RICH-RC-5065:

The LCS, batch blank, samples, sample duplicate (B1L1X9), and sample matrix spike (B1L279) results are within contractual requirements.

Tritium by method RICH-RC-5007:

The LCS, batch blank, samples and sample duplicate (B1KPP2) results are within contractual requirements.

Enriched Tritium by method RICH-RC-5024

The enriched tritium analysis was not completed at the time of reporting.

Carbon-14 by method RICH-RC-5022:

Pacific Northwest National Laboratories January 27, 2007

The LCS, batch blank, samples and sample duplicate (B1L1X9) results are within contractual requirements.

Total Uranium

Total Uranium by method RICH-RC-5058:

The LCS, batch blank, samples, sample duplicate (B1LD15), and sample matrix spike (B1LD20) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sherryl A Adam Project Manager

Drinking Water Method Cross References

	DRINKING WATER	ASTM METHOD CROSS REFERENCES
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-24		
The Gross Beta LCS is prepared with Sr/Y-90) (unless otherwise s	pecified in the case narrative)

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

	Report Definitions
Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) u _c _Combined Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c the combined uncertainty. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S-D)/[sqrt(TPUs^2 + TPUd^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

STL Richland Report

Lab Code: STLRL

FormNbr	r: R	FormatType:	FEAD Vers	ion: 05	Rpt N	br: 34341		File Name:	: h:\Reportdb\e	edd\FeadIV\Rad\W050)78.Edd, h:\Re	portdb\ed	d\FeadIV\Rad\34341.E	Edd
Lab Sample Id: 9JLDV110	Client Id: B1LD00	Test User	Contract Nbr MW6-SBB-A1	SAF Nb S07-012	r Sdg Nb r: W05078	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		I	lection Date: 2006 10:14	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
3353645	Uranium	7440-61-1	1.91E+02	ug/L	2.3E+01	2.3E+01		7.73E-0)2	UTOT_KPA	2.71E-02	ML	01/24/2007 16:30)
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	r Sdg Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			lection Date:	
9JLDV310	B1LD05		MW6-SBB-A1	S07-012	W05078	3						12/11/2	2006 09:15	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353645	Uranium	7440-61-1	2.90E+01	ug/L	3.4E+00	3.4E+00		8.42E-0)2	UTOT_KPA	2.49E-02	ML	01/24/2007 16:35	5
Lab Sample Id: 9JLDV410	Client Id: B1LCY5	Test User	Contract Nbr MW6-SBB-A1	SAF Nb S07-012	or Sdg Nb r: W05078	QC Typ		Moisture/ Solids%*:	Distilled Volume	Collection Date: 12/11/2006 11:29				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353645	Uranium	7440-61-1	2.55E+01	ug/L	3.0E+00	3.0E+00		8.22E-0)2	UTOT_KPA	2.55E-02	ML	01/24/2007 16:36	i 1
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:	e: Date:			
9JLDV810	B1LCX5		MW6-SBB-A1	S07-012	W05078	3						12/11/2	2006 10:26	
Batch	Analyte	CAS#	Result			TotU 2S	Qual		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353645	Uranium	7440-61-1	8.63E+00	ug/L	1.0E+00	1.0E+00		7.82E-0)2	UTOT_KPA	2.68E-02	ML	01/24/2007 16:38	3 I
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:	: Date:		Date:	
9JLDVP10	B1LCJ0	0.10"	MW6-SBB-A1		W05078					**			2006 13:00	
Batch 6353645	Analyte Uranium	CAS# 7440-61-1	Result 4.82E+00	Unit ug/L	CntU 2S 4.9E-01	TotU 2S 4.9E-01	Qual	M DA 7.65E-0	TrcYield)2	Method UTOT_KPA	Alq Size 2.74E-02	Unit ML	Analy Date/Time 01/24/2007 16:22	Act
Lab Sample Id: 9JLDVW10	Client Id:	Test User	Contract Nbr MW6-SBB-A1	SAF Nb	or Sdg Nbr: W05078	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		I	lection Date: 2006 13:51	
		040#				TotU 2S	0	I MDA	TrcYield	Method	Al., O:			
Batch 6353645	Analyte Uranium	CAS# 7440-61-1	Result 6.50E+00	Unit ug/L	7.7E-01	7.7E-01	Qual	8.28E-0		UTOT_KPA	Alq Size 2.53E-02	Unit ML	Analy Date/Time 01/24/2007 16:25	Act
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	or Sdg Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:	-		lection Date:	
9JLDWG10	B1LCY0		MW6-SBB-A1	S07-012	W05078	3						12/11/2	2006 12:17	
Batch	Analyte	CAS#	Result			TotU 2S	Qual		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353661	SR-90	10098-97-2	2.04E-01	pCi/L	2.6E-01	2.8E-01	U	5.91E-0	1 59.6	SRISO_SEP_PRE	9.965E-01	L	01/21/2007 08:32	: 1

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

rptFeadRadSummaryEdd v3.48

J Qual - No U qualifier has been assigned and the result is below the Reporting B Qual - Analyte was found in the associated laboratory blank above the MDC.

1/27/200	07 3:20:26 PM	1			SI	TL Rick	hlar	id Repor	· t			I	Lab Code: STLRL	
FormNb	r: R	FormatType: F	EAD Versi	on: 05	Rpt N	br: 34341		File Name: h	:\Reportdb\	edd\FeadIV\Rad\W050	78.Edd, h:\Rep	ortdb\ed	d\FeadIV\Rad\34341	.Edd
353646	U-234	13966-29-5	2.45E+01	pCi/L	1.7E+00	4.4E+00	emesor.	1.45E-01	94.7	UISO_PLATE_AEA	2.006E-01	L	01/16/2007 14:2	20 1
353646	U-235	15117-96-1	7.55E-01	pCi/L	3.0E-01	3.3E-01		1.45E-01	94.7	UISO_PLATE_AEA	2.006E-01	L	01/16/2007 14:2	20 1
353646	U-238	U-238	2.31E+01	pCi/L	1.7E+00	4.2E+00		1.45E-01	94.7	UISO_PLATE_AEA	2.006E-01	L	01/16/2007 14:2	20 1
6353645	Uranium	7440-61-1	6.79E+01	ug/L	8.0E+00	8.0E+00		8.25E-02		UTOT_KPA	2.54E-02	ML	01/24/2007 16:4	10 I
Lab Sample Id:	Client Id: B1L646	Test User	Contract Nbr MW6-SBB-A1	SAF Nb	r Sdg Nbr: W05078	QC Type		Moisture/ Solids%*:	Distilled Volume			[lection Date: 2006 12:19	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qua	I MDA 1	FrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
353647	H-3	10028-17-8	3.74E+03	pCi/L		3.1E+02		3.30E+02		906.0_H3_LSC	5.00E-03	L	01/06/2007 08:3	
3353650	ALPHA	12587-46-1	2.35E-01	pCi/L	8.3E-01	8.3E-01	U	1.94E+00	100.0	9310 ALPHABETA	1.592E-01	L	01/19/2007 18:0)3 I
6353651	BETA	12587-47-2	1.13E+02	pCi/L	5.1E+00	1.5E+01		2.83E+00	100.0	9310_ALPHABETA	2.043E-01	L	01/19/2007 13:2	27 I
353657	BE-7	13966-02-4	4.19E+01	pCi/L	2.6E+01	2.6E+01	U	5.59E+01		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	
353657	CO-60	10198-40-0	-8.29E-01	pCi/L	2.1E+00	2.1E+00	U	3.90E+00		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	
353657	CS-134	13967-70-9	7.45E-01	pCi/L	2.4E+00	2.4E+00	U	4.74E+00		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	
3353657	CS-137	10045-97-3	-8.69E-01	pCi/L	2.2E+00	2.2E+00	U	3.82E+00		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	30 I
353657	EU-152	14683-23-9	-1.96E+00	pCi/L	5.4E+00	5.4E+00	U	9.49E+00		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	30 I
353657	EU-154	15585-10-1	-8.58E-01	pCi/L	5.6E+00	5.6E+00	U	1.10E+01		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	30 I
353657	EU-155	14391-16-3	2.98E+00	pCi/L	4.2E+00	4.2E+00	U	7.77E+00		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	30 I
6353657	K-40	13966-00-2	-5.47E+01	pCi/L	4.4E+01	4.4E+01	U	9.24E+01		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	30 I
6353657	RU-106	13967-48-1	5.70E+00	pCi/L	2.0E+01	2.0E+01	U	3.88E+01		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	30 I
6353657	SB-125	14234-35-6	3.14E+00	pCi/L	5.2E+00	5.2E+00	U	1.02E+01		GAMMALL_GS	1.999E+00	L	01/17/2007 14:3	30 I
3353655	TC-99	14133-76-7	4.60E+02	pCi/L	1.2E+01	3.3E+01		8.88E+00	100.0	TC99_ETVDSK_LS	1.262E-01	L	01/16/2007 00:3	16 I
Lab Sample Id:		Test User	Contract Nbr	SAF Nb	Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume			ı	lection Date:	
9JLF3410	B1L2C8		MW6-SBB-A1	107-010	W05078							12/12/2	2006 13:14	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qua		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
6353659	I-129L	15046-84-1	7.65E-02	pCi/L	1.3E-01	1.3E-01	U	2.62E-01		1129LL_SEP_LEPS			01/25/2007 13:	
6353661	SR-90	10098-97-2	~6.40E-02	pCi/L		1.9E-01	U	4.46E-01		SRISO_SEP_PRE			01/21/2007 12:0	
6353655	TC-99	14133-76-7	1.52E+02	pCI/L	7.5E+00	1.5E+01		9.17E+00	100.0	TC99_ETVDSK_LS	1.25/E-01	L	01/16/2007 03:2	24
Lab Sample Id: 9JLF3X10	Client Id: B1L279	Test User	Contract Nbr MW6-SBB-A1	SAF Nb 107-010	r Sdg Nbr: W05078			Moisture/ Solids%*:	Distilled Volume	•	·	I	llection Date: 2006 10:09	
Batch	Analyte	CAS#	Result		CntU 2S		Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
6353659	I-129L	15046-84-1	-2.77E-02		1.2E-01		U	2.27E-01		I129LL_SEP_LEPS	•		01/25/2007 13:	

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

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B Qual- Analyte was found in the associated laboratory blank above the MDC.

1/27/2007	7 3:20:26 PM	<u>, </u>			S'	TL Ric	hlan	d Repo	ort			I	ab Code: STLRL	
FormNbr:	: R	FormatType:	FEAD Vers	ion: 05	Rpt N	l br : 34341		File Name:	: h:\Reportdb\	edd\FeadIV\Rad\W050	78.Edd, h:\Rep	ortdb\ed	d\FeadIV\Rad\34341.E	Edd
	SR-90 TC-99	10098-97-2 14133-76-7	2.54E-01 6.96E+01	pCi/L pCi/L	2.2E-01 6.0E+00	2.2E-01 9.8E+00	U		01 80.9 00 100.0	SRISO_SEP_PRE TC99_ETVDSK_LS		L	01/21/2007 12:01 01/16/2007 01:19	
Lab Sample Id: 9JLF4210	Client Id: B1KYJ3	Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05078	Q(Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		E	lection Date: 006 10:32	
	Analyte H-3 SR-90	CAS# 10028-17-8 10098-97-2	Result 1.63E+01 -6.81E-02	Unit pCi/L pCi/L		TotU 2S 1.5E+02 2.5E-01	Qua U U	3.29E+	TrcYield 02 100.0 01 60.9	Method 906.0_H3_LSC SRISO_SEP_PRE	Alq Size 5.00E-03 1.002E+00	Unit L L	Analy Date/Time 01/06/2007 10:00 01/21/2007 12:01	
Lab Sample Id: 9JLF6210	Client Id: B1L309	Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05078	Q(Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		מ	lection Date: 006 12:26	
Batch 6353645	Analyte Uranium	CAS# 7440-61-1	Result 2.91E+00	Unit ug/L	CntU 2S 3.0E-01	TotU 2S 3.0E-01	Qua	MDA 8.19E-0	TrcYield 02	Method UTOT_KPA	Alq Size 2.56E-02	Unit ML	Analy Date/Time 01/24/2007 16:56	Act
Lab Sample Id: 9JLFP210	Client Id: B1KPP2	Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05078	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:	A A A A A A A A A A A A A A A A A A A	r	lection Date: 006 09:28	
	Analyte H-3 ALPHA	CAS # 10028-17-8 12587-46-1	Result -2.13E+01 5.92E+00	Unit pCi/L pCi/L		TotU 2S 1.5E+02 2.5E+00	Qua U	3.30E+	TrcYield 02 100.0 00 100.0	Method 906.0_H3_LSC 9310_ALPHABETA	Alq Size 5.00E-03 1.157E-01	Unit L L	Analy Date/Time 01/06/2007 05:53 01/19/2007 18:03	
Lab Sample Id: 9JLFPN10	Client Id: B1LD15	Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05078	Тур		Moisture/ Solids%*:	Moisture/ Distilled			Collection Date: 12/12/2006 11:08		
Batch 6353645	Analyte Uranium	CAS # 7440-61-1	Result 2.64E+01	Unit ug/L	CntU 2S 3.1E+00	TotU 2S 3.1E+00	Qua	MDA 8.35E-0	TrcYield	Method UTOT_KPA	Alq Size 2.51E-02	Unit ML	Analy Date/Time 01/24/2007 16:42	Act
Lab Sample Id: 9JLFPP10	Client Id: B1LD20	Test User	Contract Nbr MW6-SBB-A1	SAF N E S07-012	or Sdg Nbr: W05078	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		[lection Date: 1006 11:55	
Batch 6353645	Analyte Uranium	CAS# 7440-61-1	Result 6.49E+01	Unit ug/L	CntU 2S 7.6E+00	TotU 2S 7.6E+00	Qua	MDA 8.38E-0	TrcYield	Method UTOT_KPA	Alq Size 2.50E-02	Unit ML	Analy Date/Time 01/24/2007 16:46	Act
Lab Sample Id: 9JLFPQ10	Client Id: B1LD10	Test User	Contract Nbr MW6-SBB-A1	SAF N b	Nbr:			Moisture/ Solids%*:	Distilled Volume	•		[lection Date: 1006 13:17	
Batch	Analyte ALPHA	CAS # 12587-46-1	Result 4.52E+01	Unit		TotU 2S	Qua		TrcYield 00 100.0	Method 9310_ALPHABETA	Alq Size 1.997E-01	Unit L	Analy Date/Time 01/19/2007 16:34	Act

STL Richland

rptFeadRadSummaryEdd v3.48

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

1/27/2007	3:20:26 PM				S	TL Ricl	nland	d Repor	rt			I	ab Code: STLRL	
FormNbr:	R	FormatType: F	EAD Versi	ion: 05	Rpt N	br: 34341		File Name:	h:\Reportdb\	edd\FeadIV\Rad\W050	78.Edd, h:\Rep	ortdb\ed	d\FeadIV\Rad\34341.E	dd
6353651 E	ВЕТА	12587-47-2	3.66E+01	pCi/L	3.1E+00	5.6E+00		2.93E+00	0 100.0	9310_ALPHABETA	2.086E-01	L	01/19/2007 13:27	
6353645 L	Jranium	7440-61-1	1.05E+02	ug/L	1.2E+01	1.2E+01		8.35E-02		UTOT_KPA	2.51E-02	ML	01/24/2007 16:54	· I
Lab Sample Id: 9JLG7H10 E	Client Id: 31LCD3	Test User	Contract Nbr MW6-SBB-A1	SAF NI S07-012	Nbr:	QC Typ		loisture/ olids%*:	Distilled Volume	Sample On Date:			ection late: 006 09:00	
	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
6353645 L	Jranium	7440-61-1	4.34E-02	ug/L	7.9E-03	7.9E-03	U	7.59E-02		UTOT_KPA	2.76E-02	ML	01/24/2007 16:59	I
Lab Sample Id: 9JLGW510 E	Client Id: 31LCX0	Test User	Contract Nbr MW6-SBB-A1	SAF NI S07-012	Nbr:	QC Typ		loisture/ olids%*:	Distilled Volume	Sample On Date:			ection Pate: 006 08:47	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
6353646 L	J-234	13966-29-5	1.22E+01	pCi/L	1.2E+00	2.3E+00		1.73E-01	110.4	UISO_PLATE_AEA	2.002E-01	L	01/16/2007 14:20	1
6353646 L	J-235	15117-96-1	4.29E-01	pCi/L	2.3E-01	2.4E-01		1.47E-01	110.4	UISO_PLATE_AEA	2.002E-01	L	01/16/2007 14:20	1
6353646 L	J-238	U-238	1.12E+01	pCi/L	1.2E+00	2.2E+00		1.47E-01	110.4	UISO_PLATE_AEA	2.002E-01	L	01/16/2007 14:20	ı
6353645 L	Jranium	7440-61-1	3.02E+01	ug/L	3.6E+00	3.6E+00		8.12E-02		UTOT_KPA	2.58E-02	ML	01/24/2007 16:58	1
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF N	br Sdg Nbr:	QC Typ		loisture/	Distilled Volume	Sample On Date:	,,,,,		ection Pate:	
9JLPE310 E	31L1X9		MW6-SBB-A1	107-009	W05078	3						12/14/2	006 11:14	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
6353654 C	C-14	14762-75-5	2.43E+00	pCi/L	3.4E+00	6.8E+00	U	8.03E+00	100.0	C14_LSC	2.00E-01	L	01/19/2007 11:42	
6353657 E	3E-7	13966-02-4	-5.72E-01	pCi/L	2.2E+01	2.2E+01	U	4.04E+0	1	GAMMALL_GS	1.95E+00	L	01/17/2007 14:31	Į
6353657 C	CO-60	10198-40-0	9.16E-02	pCi/L	2.8E+00	2.8E+00	U	5.37E+00)	GAMMALL_GS	1.95E+00	L	01/17/2007 14:31	i
6353657 C	CS-134	13967-70-9	-8.29E-01	pCi/L	2.3E+00	2.3E+00	U	4.00E+00)	GAMMALL_GS	1.95E+00	L	01/17/2007 14:31	I
6353657 C	CS-137	10045-97-3	4.63E-01	pCi/L	2.3E+00	2.3E+00	U	4.32E+00)	GAMMALL_GS	1.95E+00	L	01/17/2007 14:31	I
										O A A A A A A A A A A A A A A A A A A A	1.055,00	L	01/17/2007 14:31	I
	EU-152	14683-23-9	1.59E+00	pCi/L	5.2E+00	5.2E+00	U	9.63E+00)	GAMMALL_GS	1.95E+00	_		
	EU-152 EU-154	14683-23-9 15585-10-1	1.62E-01	pCi/L pCi/L	5.2E+00 8.6E+00	5.2E+00 8.6E+00	U	9.63E+00 1.61E+0		GAMMALL_GS	1.95E+00 1.95E+00	L	01/17/2007 14:31	I
6353657 E				•	8.6E+00				1					
6353657 E 6353657 E 6353657 H	EU-154 EU-155 <-40	15585-10-1 14391-16-3 13966-00-2	1.62E-01 -3.58E+00 -1.24E+01	pCi/L pCi/L pCi/L	8.6E+00 3.4E+00 4.8E+01	8.6E+00 3.4E+00 4.8E+01	U U U	1.61E+0 5.41E+0 1.08E+0	1) 2	GAMMALL_GS GAMMALL_GS GAMMALL_GS	1.95E+00 1.95E+00 1.95E+00	L	01/17/2007 14:31 01/17/2007 14:31 01/17/2007 14:31	1
6353657 E 6353657 E 6353657 F	EU-154 EU-155 K-40 RU-106	15585-10-1 14391-16-3 13966-00-2 13967-48-1	1.62E-01 -3.58E+00 -1.24E+01 -2.36E+00	pCi/L pCi/L pCi/L pCi/L	8.6E+00 3.4E+00 4.8E+01 2.1E+01	8.6E+00 3.4E+00 4.8E+01 2.1E+01	U U	1.61E+00 5.41E+00 1.08E+02 3.89E+0	1) 2 1	GAMMALL_GS GAMMALL_GS	1.95E+00 1.95E+00	Ļ L	01/17/2007 14:31 01/17/2007 14:31	1
6353657 E 6353657 E 6353657 F 6353657 F	EU-154 EU-155 <-40	15585-10-1 14391-16-3 13966-00-2	1.62E-01 -3.58E+00 -1.24E+01 -2.36E+00 -2.08E+00	pCi/L pCi/L pCi/L	8.6E+00 3.4E+00 4.8E+01	8.6E+00 3.4E+00 4.8E+01	U U U U	1.61E+0° 5.41E+0° 1.08E+0° 3.89E+0° 8.35E+0°	1) 2 1	GAMMALL_GS GAMMALL_GS GAMMALL_GS	1.95E+00 1.95E+00 1.95E+00	L L	01/17/2007 14:31 01/17/2007 14:31 01/17/2007 14:31	1
6353657 E 6353657 E 6353657 F 6353657 S	EU-154 EU-155 K-40 RU-106	15585-10-1 14391-16-3 13966-00-2 13967-48-1	1.62E-01 -3.58E+00 -1.24E+01 -2.36E+00	pCi/L pCi/L pCi/L pCi/L	8.6E+00 3.4E+00 4.8E+01 2.1E+01	8.6E+00 3.4E+00 4.8E+01 2.1E+01	U U U	1.61E+00 5.41E+00 1.08E+02 3.89E+0	1) 2 1	GAMMALL_GS GAMMALL_GS GAMMALL_GS GAMMALL_GS	1.95E+00 1.95E+00 1.95E+00 1.95E+00 1.95E+00	L L L	01/17/2007 14:31 01/17/2007 14:31 01/17/2007 14:31 01/17/2007 14:31	! ! !
6353657 E 6353657 E 6353657 F 6353657 F 6353659 E	EU-154 EU-155 K-40 RU-106 SB-125	15585-10-1 14391-16-3 13966-00-2 13967-48-1 14234-35-6	1.62E-01 -3.58E+00 -1.24E+01 -2.36E+00 -2.08E+00	pCi/L pCi/L pCi/L pCi/L pCi/L	8.6E+00 3.4E+00 4.8E+01 2.1E+01 4.8E+00	8.6E+00 3.4E+00 4.8E+01 2.1E+01 4.8E+00	U U U U	1.61E+0° 5.41E+0° 1.08E+0° 3.89E+0° 8.35E+0°	1 2 1 3 97.8	GAMMALL_GS GAMMALL_GS GAMMALL_GS GAMMALL_GS GAMMALL_GS	1.95E+00 1.95E+00 1.95E+00 1.95E+00 1.95E+00 3.8905E+00	L L L	01/17/2007 14:31 01/17/2007 14:31 01/17/2007 14:31 01/17/2007 14:31 01/17/2007 14:31	1

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

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B Qual- Analyte was found in the associated laboratory blank above the MDC.

1/27/2007 3:20:26 F	PM		STL Richla	nd Report		Lab Code: STLRL
FormNbr: R	FormatType: FEAD	Version: 05	Rpt Nbr: 34341	File Name: h:\Reportdb\e	edd\FeadIV\Rad\W05078.Edd, h:\Repo	ortdb\edd\FeadIV\Rad\34341.Edd
6353655 TC-99	14133-76-7 5	.74E+02 pCi/L	1.3E+01 4.0E+01	8.56E+00 100.0	TC99_ETVDSK_LS 1.254E-01	L 01/16/2007 04:27 I

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ21AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

NA

Matrix:

WATER **WATER**

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

Received Date:

12/14/2006

SAF Nbr

Contract Nbr Test User MW6-SBB-A19981

Case Nbr SAS Nbr

Suffix

Distilled Volume Decant

File Id

FSuffix RTyp BG Η

Batch # / Qc Type

Analyt/ CAS# 6353654 C-14

Result/ **Orig Rst** 5.34E+00

Tot/Cnt Unit Uncert 2S pCi/L 7.1E+00

Qu-

Tracer MDC Yield 8.03E+00 100.0

Spk Conc/ %Rec

Analy Method C14_LSC

Aliq Size/ 2.00E-01

Date/Time Analyzed 01/19/2007

RPD/ UCL

RER/ LCS UCL LCL/UCL Typ

D

BLK 14762-75-5 3.5E+00

al

L

10:17

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ41AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

Yield

Received Date: 12/14/2006

R

SAF Nbr

Contract Nbr MW6-SBB-A19981 **Test User** Case Nbr SAS Nbr

Suffix

Decant **Distilled Volume** File Id

FSuffix RTyp ВΙ ٠H

Batch # / Qc Type 6353655 TC-99

BLK

Analyt/ CAS#

14133-76-7

Result/ Orig Rst -7.99E+00

Tot/Cnt Unit **Uncert 2S** pCi/L 5.0E+00 3.4E+00

Qual MDC 8.13E+00 100.0

Tracer Spk Conc/ %Rec

Analy Method TC99_ETVDSK 1.254E-01

Aliq Date/Time Size/ Analyzed 01/16/2007

RPD/ UCL RER/ LCS UCL LCL/UCL Typ D

L

06:32

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ51AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

Received Date:

12/14/2006

	2.1														
SAFI	SAF Nbr Contract Nbr MW6-SBB-A19981		V6-SBB-A19981		Case	Nbr S	SAS Nbr	Suffix	Decant [Distilled Volume	File	File Id		FSuffix RTy BK H	
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6353657	BE-7	-5.17E+00	pCi/L	2.2E+01	U	3.92E+0	1		GAMMALL_GS	1.9992E+00	01/17/2007			D	
BLK	13966-02-	4		2.2E+01						L	14:32				
6353657	CO-60	-6.66E-01	pCi/L	2.2E+00	U	4.12E+0	O		GAMMALL_GS	1.9992E+00	01/17/2007			D)
BLK	10198-40-	0		2.2E+00						L	14:32				
6353657	CS-134	7.72E-01	pCi/L	2.6E+00	U	5.11E+0	C		GAMMALL_GS	1.9992E+00	01/17/2007			D	,
BLK	13967-70-	9		2.6E+00						L	14:32				
6353657	CS-137	-1.61E-01	pCi/L	2.2E+00	U	4.07E+0	0		GAMMALL_GS	1.9992E+00	01/17/2007			D	,
BLK	10045-97-	3		2.2E+00						L	14:32				
6353657	EU-152	-5.06E+00	pCi/L	5.4E+00	U	8.69E+0)		GAMMALL_GS	1.9992E+00	01/17/2007			D	1
BLK	14683-23-	9		5.4E+00						L	14:32				
6353657	EU-154	-3.77E+00	pCi/L	7.0E+00	U	1.21E+0	1		GAMMALL_GS	1.9992E+00	01/17/2007			D	1
BLK	15585-10-			7.0E+00						L	14:32				
6353657	EU-155	2.84E+00	pCi/L	4.3E+00	U	8.41E+0	0		GAMMALL_GS	1.9992E+00	01/17/2007			D)
BLK	14391-16-			4.3E+00						L	14:32				
6353657	K-40	6.86E+00	pCi/L	5.6E+01	U	1.26E+0	2		GAMMALL_GS	1.9992E+00				D)
BLK	13966-00-			5.6E+01						L	14:32				
6353657	RU-106	-9.14E+00	pCi/L	2.0E+01	U	3.49E+0	1		GAMMALL_GS	1.9992E+00	01/17/2007			D)
BLK	13967-48-			2.0E+01						L	14:32				
6353657	SB-125	9.19E-01	pCi/L	4.8E+00	U	9.01E+0)		GAMMALL_GS	1.9992E+00	01/17/2007			D)
BLK	14234-35-	6		4.8E+00						L	14:32				

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J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ61AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 13:14

Client Id:

NA

Matrix: QC Type: **WATER**

WATER

Sample On Date: **Received Date:**

12/12/2006

Moisture/Solids%*:

Contract Nbr Test User

Case Nbr

BLK

Suffix

Decant **Distilled Volume**

File Id

FSuffix RTyp BM

SAF Nbr

MW6-SBB-A19981

Qu-

al

Tracer

Yield

SAS Nbr

Spk Conc/ %Rec

Analy Method

Aliq Size/

Date/Time Analyzed

RPD/ RER/ UCL

LCS

Batch # / Qc Type 6353659

BLK

Analyt/ Result/ CAS# **Orig Rst** I-129L 1.86E-01 15046-84-1

Unit Uncert 2S pCi/L 1.0E-01 1.0E-01

Tot/Cnt

MDC 2.67E-01 100.0

I129LL SEP L

3.8594E+00 01/25/2007

LCL/UCL Typ UCL

D

Н

R

16:31

rptFeadRadEdd v3.68

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\V.Rad\34341.Edd

Lab Sample Id:

JLTJ71AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/11/2006 12:17

Client Id:

SAF Nbr

Batch # /

Qc Type

6353661

NA

Matrix:

QC Type:

WATER

WATER

Sample On Date: Received Date:

12/11/2006

Contract Nbr

Test User

BLK

Tracer

Decant

Distilled Volume

File Id

FSuffix RTyp

MW6-SBB-A19981

Case Nbr

SAS Nbr

Suffix

ВО Н

R

D

Analyt/ CAS# SR-90

Result/ **Orig Rst** 5.20E-02

Tot/Cnt Unit Uncert 2S pCi/L 2.8E-01

Qual

MDC Yield 6.11E-01 60.1

Spk Conc/ %Rec

Analy Method SRISO_SEP_P

Aliq Size/ 1.0019E+00 01/21/2007

Date/Time Analyzed

RER/ RPD/ UCL UCL

LCS LCL/UCL Typ

10098-97-2 BLK

2.8E-01

12:01

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ81AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

RER/

UCL

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

Received Date:

12/14/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 Test User Case Nbr SAS Nbr

Suffix Decant **Distilled Volume**

File Id

FSuffix RTyp BQ

Н

R

Batch # / Analyt/ Qc Type CAS# 6353662 NP-237

Result/ **Orig Rst** 4.12E-02

Tot/Cnt Unit Uncert 2S pCi/L 1.1E-01

Qual MDC 2.47E-01

Tracer Yield 80.2

Spk Conc/ %Rec

Analy Aliq Method NP237 LLE P

Date/Time Size/ Analyzed 2.012E-01 01/17/2007

RPD/ UCL

LCS LCL/UCL Typ

BLK 13994-20-2

1.1E-01

L 17:55

D

Saturday, January 27, 2007 STL Richland QC Blank Report Lab Code: STLRL FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd Lab Sample Id: JLTJM1AB Sdg/Rept Nbr: W05078 34341 Collection Date: 12/12/2006 11:08 Client Id: NA Matrix: **WATER** WATER Sample On Date: Moisture/Solids%*: QC Type: BLK **Received Date:** 12/12/2006

SAF I		ontract Nbr 6-SBB-A19981	7	est User	Case	Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix F BS	RТур Н
Batch # / Qc Type 6353645	Analyt/ CAS# Uranium	Result/ Orig Rst 0.00E+00	U nit ug/L	Tot/Cnt Uncert 2S 0.0E+00	Qu- al U	MDC 2.10E-0		Spk Conc/ %Rec	Analy Method UTOT_KPA	Aliq Size/ 2.54E-02	Date/Time Analyzed 01/24/2007	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ D
BLK	7440-61-1			0.0E+00						ML	16:08				

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJN1AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/13/2006 08:47

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Maisturo/Calido9/*.

00 T. ...

DIV

WOIS	Moisture/Solids%^:				(QC Type:	BLK			Recei	ved Date:	12/13/	2006		
SAF		Contract Nbr V6-SBB-A19981	٦	Test User	Case	Nbr S	SAS Nbr	Suffix	Decant [Distilled Volume	Fil	e Id		FSuffix R	Typ H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCI	R L Typ
6353646 BLK	U-234 13966-29-5	-6.01E-03	pCi/L	6.1E-02 6.1E-02	U	1.44E-01	90.4		UISO_PLATE_	2.025E-01 L	01/16/2007 14:20				D
6353646 BLK	U-235 15117-96-1	-6.01E-03	pCi/L	6.1E-02 6.1E-02	U	1.44E-01	90.4		UISO_PLATE_	2.025E-01 L	01/16/2007 14:20				D
6353646 BLK	U-238 U-238	5.41E-02	pCi/L	8.6E-02 8.6E-02	U	1.44E-01	90.4		UISO_PLATE_	2.025E-01 L	01/16/2007 14:20				D

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJP1AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 09:28

Client Id:

NA

MW6-SBB-A19981

Matrix:

Case Nbr

WATER

WATER

Sample On Date: Received Date:

12/12/2006

Moisture/Solids%*:

Contract Nbr Test User QC Type:

SAS Nbr

BLK

Decant

Distilled Volume

File Id FSuffix RTyp

Batch # /

Qc Type

SAF Nbr

Analyt/ Result/ CAS# **Orig Rst** 6353647 H-3

3.85E+01

Tot/Cnt Unit Uncert 2S pCi/L 1.5E+02

Qual U

MDC 3.30E+02 100.0

Tracer Spk Conc/ %Rec Yield

Suffix

Analy Method 906.0_H3 LSC

Aliq Size/ 5.00E-03

Date/Time Analyzed 01/06/2007 RPD/ RER/ UCL UCL

LCS LCL/UCL Typ

BX

Н

D

R

10028-17-8 BLK

1.4E+02

00:24

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJP1DX

Sdg/Rept Nbr: W05078

QC Type:

34341

Collection Date: 12/12/2006 09:28

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Received Date: 12/12/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 Case Nbr

BLK

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp ΒZ

Н

D

R

Batch # / Qc Type

BLK

Analyt/ CAS# 6353647 H-3

10028-17-8

Result/ **Orig Rst** 1.36E+02

Tot/Cnt Unit Uncert 2S pCi/L 1.6E+02 1.4E+02

Test User

Qual MDC U

Tracer Yield 3.33E+02 100.0

Spk Conc/ %Rec

Analy Method 906.0_H3_LSC

Aliq Size/ 5.00E-03

Analyzed 01/06/2007

Date/Time

RPD/ RER/ UCL UCL

LCS LCL/UCL Typ

03:09

STL Richland rptFeadRadEdd v3.68

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJT1AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 13:17

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Received Date: 12/12/2006

Moisture/Solids%*:

QC Type:

BLK

FSuffix RTyp

SAF Nbr

Contract Nbr MW6-SBB-A19981 Test User

Case Nbr

Suffix Decant **Distilled Volume**

File Id

CB Н

Batch # / Qc Type

BLK

Analyt/ CAS# 6353650 ALPHA

12587-46-1

Result/ **Orig Rst** 1.29E-01

Tot/Cnt Unit Uncert 2S pCi/L 2.8E-01 2.8E-01

Qu-MDC al 6.11E-01

Tracer Yield 100.0

SAS Nbr

Spk Conc/ %Rec

Analy Method 9310_ALPHAB

Aliq Size/ 1.993E-01

Date/Time Analyzed 01/19/2007 RPD/ RER/ UCL UCL

LCS

R

LCL/UCL Typ D

18:03

rptFeadRadEdd v3.68

II

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJV1AB

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 12:19

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

Received Date:

12/12/2006

SAF Nbr

Contract Nbr

Test User Case Nbr SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp CD

MW6-SBB-A19981

Qu-

al

Tracer Yield

Spk Conc/ %Rec

Analy Method

Aliq Size/ Date/Time Analyzed

RPD/ UCL RER/ LCS

Η

Batch # / Qc Type 6353651 BETA

Result/ Analyt/ CAS# Orig Rst 1.29E+00

Unit

Uncert 2S pCi/L 1.2E+00 1.2E+00

MDC 2.47E+00 100.0

9310 ALPHAB

2.002E-01

01/19/2007

LCL/UCL Typ UCL

D

BLK 12587-47-2

Tot/Cnt

L 13:27

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd. h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ21CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

NA

Matrix: QC Type: WATER

WATER

Sample On Date:

Received Date: 12/14/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 **Test User** Case Nbr BS

SAS Nbr

Decant

Distilled Volume

File Id FSuffix RTyp

Batch # / Qc Type

BS

Analyt/ CAS# 6353654 C-14

14762-75-5

Result/ Orig Rst 5.18E+01

Tot/Cnt Unit Uncert 2S pCi/L 1.2E+01 4.9E+00

Qu-Tracer MDC Yield 8.03E+00 100.0

Spk Conc/ %Rec 4.58E+01 113.2

Suffix

Analy Method C14_LSC

Aliq Size/ 2.00E-01 L

Analyzed 01/19/2007 11:00

Date/Time

RPD/ RER/ UCL UCL 70

LCS LCL/UCL Typ

ВН

Н

R

D 130

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ41CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

12/14/2006

Moisture/Solids%*:

QC Type:

BS

Received Date:

SAFI	SAF Nbr Contract Nbr MW6-SBB-A19981			est User	Case	Nbr S	AS Nbr	Suffix	Decant I	Distilled Volume	File	e ld		FSuffix I BJ	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353655 BS	TC-99 14133-76-7	4.49E+02	pCi/L	3.2E+01 1.2E+01		9.27E+00	100.0	5.41E+02 82.9	TC99_ETVDS	(1.252E-01 L	01/16/2007 07:35			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FSuffix RTvn

FormNbr: R

FormatType: FEAD

Test User

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ51CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

SAF Nbr

NA

Contract Nbr

Matrix:

WATER

WATER

Sample On Date: Received Date:

12/14/2006

Moisture/Solids%*:

Case Nbr

QC Type:

SAS Nbr

BS

Suffix	Decant	Distilled Volume	File Id

	MW6	-SBB-A19981		*										BL	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353657	CO-60	3.40E+01	pCi/L	8.0E+00		5.38E+00		3.78E+01	GAMMALL_GS	2.0022E+00	01/17/2007			70	D
BS	10198-40-0			8.0E+00				89.9		L	14:33			130	
6353657	CS-137	2.61E+01	pCi/L	5.8E+00		4.99E+00		2.51E+01	GAMMALL_GS	2.0022E+00	01/17/2007			70	D
BS	10045-97-3			5.8E+00				104.0		L	14:33			130	
6353657	EU-152	5.74E+01	pCi/L	1.5E+01		1.25E+01		7.63E+01	GAMMALL_GS	2.0022E+00	01/17/2007			70	D
BS	14683-23-9			1.5E+01				75.2		L	14:33			130	

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\VW05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ61CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 13:14

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date:

12/12/2006

SAF Nbr

Contract Nbr

Test User Case Nbr

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp BN

Н

R

MW6-SBB-A19981

Batch # / Analyt/ Qc Type CAS# 6353659 I-129L BS 15046-84-1

Result/ **Orig Rst** 8.01E+00

Tot/Cnt Unit Uncert 2S pCi/L 1.1E+00 1.1E+00

Qual MDC 4.91E-01

Tracer Yield 99.6

Spk Conc/ %Rec 9.92E+00 80.7

Analy Method I129LL_SEP_L

Aliq Date/Time Size/ Analyzed 3.8584E+00 01/25/2007 16:32

RPD/ RER/ UCL UCL

LCS LCL/UCL Typ 70 D

130

STL Richland QC Control Sample Report

Lab Code: STLRL

130

FormNbr: R

FormatType: FEAD

8.8E-01

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ71CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/11/2006 12:17

Client Id:

BS

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

10098-97-2

QC Type:

BS

Received Date:

12/11/2006

12:01

SAF	Nbr C	Contract Nbr	T	est User	Case	Nbr S	AS Nbr	Suffix	Decant [Distilled Volume	File	e Id		FSuffix I	RTyp
	MV	V6-SBB-A19981							*					BP	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353661	SR-90	1.31E+01	pCi/L	2.1E+00		5.71E-01	69.1	1.37E+01	SRISO_SEP_F	1.0017E+00	01/21/2007			70	D

95.6

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJ81CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date:

12/14/2006

SAFI	SAF Nbr Contract Nb MW6-SBB-A		Т	est User	Case	Nbr S	SAS Nbr	Suffix	Decant I	Distilled Volume	File	e Id		FSuffix I BR	₹Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353662 BS	NP-237 13994-20-2	1.01E+01	pCi/L	2.1E+00 1.6E+00		2.88E-01	71.5	9.18E+00 109.9	NP237_LLE_P	2.007E-01 L	01/17/2007 17:55			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJM1CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 11:08

Client Id:

SAF Nbr

NA

Matrix:

QC Type:

WATER

WATER

Sample On Date:

Received Date:

12/12/2006

Moisture/Solids%*:

Contract Nbr Test User MW6-SBB-A19981

Case Nbr

BS

SAS Nbr

Suffix

Distilled Volume

File Id

Batch #/ Qc Type 6353645 Uranium

BS

Analyt/ CAS#

Result/ Orig Rst 3.55E+01

Tot/Cnt Unit Uncert 2S ug/L 4.2E+00

Qual

Tracer MDC Yield 8.15E-02

Spk Conc/ %Rec 3.55E+01

Analy Method UTOT KPA

Decant

Aliq Size/ 2.57E-02 ML

Analyzed 01/24/2007

LCS RPD/ RER/ UCL UCL 70

LCL/UCL Typ D

FSuffix RTyp

Н

R

BT

7440-61-1

4.2E+00

99.9

16:18

Date/Time

130

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\V\Rad\V.Ad\\Ad\.Edd

Lab Sample Id:

JLTJM1DS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 11:08

Client Id:

NA

Matrix:

WATER

BS

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

Received Date:

12/12/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

Suffix

Decant **Distilled Volume** File Id

FSuffix RTyp BU Н

Batch # / Qc Type 6353645

BS

Analyt/ CAS# Uranium 7440-61-1

Result/ **Orig Rst** 3.63E+00

Tot/Cnt Unit Uncert 2S 3.7E-01 ug/L 3.7E-01

Test User

Qu-Tracer al MDC Yield 8.09E-02

Spk Conc/ %Rec 3,48E+00 104.4

Analy Method UTOT KPA

Aliq Size/ 2.59E-02 ML

Date/Time Analyzed 01/24/2007 16:20

RPD/ RER/ UCL UCL

LCS LCL/UCL Typ

R

70 D 130

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJN1CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/13/2006 08:47

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

12/13/2006

Moisture/Solids%*:

QC Type:

BS

Received Date:

SAF I		ntract Nbr i-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix F BW	RТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353646 BS	U-234 13966-29-5	9.06E+00	pCi/L	1.9E+00 1.2E+00		1.76E-01	83.6	8.64E+00 104.8	UISO_PLATE	_ 1.998E-01 L	01/16/2007 14:20			70 130	D
6353646 BS	U-238 U-238	8.73E+00	pCi/L	1.9E+00 1.1E+00		1.76E-01	83.6	9.05E+00 96.4	UISO_PLATE_	_ 1.998E-01 L	01/16/2007 14:20			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJP1CS

Sdg/Rept Nbr: W05078

Collection Date: 12/12/2006 09:28

Client Id:

NA

Matrix:

WATER

WATER

34341

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date:

12/12/2006

SAF		ontract Nbr /6-SBB-A19981	T	est User	Case	Nbr SA	AS Nbr	Suffix	Decant [Distilled Volume	File	e ld		FSuffix F BY	Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353647	H-3	2.61E+03	pCi/L	2.6E+02		3.30E+02	100.0	2.72E+03	906.0_H3_LSC	5.00E-03	01/06/2007			70	D
BS	10028-17-8			2.2E+02				95.9		L	01:46			130	

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJP1EM

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 09:28

Client Id:

NA

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

Matrix:

BS

Received Date:

12/12/2006

SAFI	SAF Nbr Contrac MW6-SB		Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant D	Distilled Volume	File	ld		FSuffix F CA	РТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353647 BS	H-3 10028-17-8	2.53E+03	pCi/L	2.6E+02 2.2E+02		3.35E+02	100.0	2.72E+03 93.2	906.0_H3_LSC	5.00E-03 L	01/06/2007 04:31			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

Lab Sample Id:

JLTJT1CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 13:17

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date:

12/12/2006

SAFI		itract Nbr -SBB-A19981	7	est User	Case	Nbr \$	SAS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix I	RТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353650 BS	ALPHA 12587-46-1	2.08E+01	pCi/L	5.3E+00 2.1E+00		7.77E-0	1 100.0	2.31E+01 90.0	9310_ALPHAE	3 1.98E-01 L	01/19/2007 18:03			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLTJV1CS

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 12:19

Client Id:

NA

Matrix:

WATER

BS

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

Received Date: 12/12/2006

SAF Nbr **Contract Nbr Test User**

MW6-SBB-A19981

Case Nbr

Suffix

Decant

Distilled Volume

FSuffix RTyp

CE Н

R

Batch # / Qc Type 6353651

BS

Analyt/ Result/ CAS# **Orig Rst** BETA 2.45E+01 12587-47-2

Unit pCi/L 4.0E+00

Tot/Cnt Uncert 2S 2.4E+00

Qu-

al

MDC Yield 2.46E+00 100.0

SAS Nbr

Tracer Spk Conc/ 2.23E+01 110.1

%Rec

Analy Method 9310_ALPHAB

Aliq Size/ 2.019E-01 L

Date/Time RPD/ Analyzed UCL 01/19/2007 13:27

File Id

LCS RER/ LCL/UCL Typ UCL 70

D 130

STL Richland QC Duplicate Report

FormNbr: B

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLDWG1ER

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/11/2006 12:17

RER/

Lab Code: STLRL

Client Id:

B1LCY0

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

12/11/2006

SAF Nbr S07-012

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

71.3

Suffix Decant **Distilled Volume**

L

File Id

RPD/

FSuffix RTyp ΑT Н

R

D

Batch # / Qc Type 6353661

DUP

Analyt/ CAS# SR-90 10098-97-2

Result/ **Orig Rst** 1.80E-01 2.04E-01

Tot/Cnt Unit Uncert 2S pCi/L 2.4E-01 2.4E-01

Test User

Qual MDC 4.89E-01 Tracer Yield

Spk Conc/ Analy %Rec Method SRISO_SEP_P

Aliq Size/ 9.984E-01

Date/Time Analyzed 01/21/2007

08:32

UCL UCL 12.6

LCS LCL/UCL Typ

0.1 20.0 3

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\V\05078.Edd, h:\Reportdb\edd\FeadIV\Rad\V\Ad\34341.Edd

Lab Sample Id:

JLF2P1GR

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 12:19

Client Id:

B1L646

Matrix:

WATER

WATER Sample On Date:

Received Date:

12/12/2006

Moisture/Solids%*:

QC Type:

DUP

FSuffix RTyp

RER/

SAF Nbr W07-011

Contract Nbr MW6-SBB-A19981 **Test User**

Case Nbr

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

ΑU Н

Batch # / Qc Type

6353651

Analyt/ CAS# **BETA**

Result/ **Orig Rst** 1.17E+02

Tot/Cnt Unit Uncert 2S pCi/L 1.6E+01

Qu-MDC al

Tracer Yield

Spk Conc/ %Rec

Analy Method 9310_ALPHAB

Aliq Size/ 2.028E-01

Date/Time Analyzed 01/19/2007

UCL UCL 3.6 0.4

RPD/

LCS

R LCL/UCL Typ

13:27

3

D

DUP 12587-47-2 1.13E+02

5.2E+00

2.79E+00 100.0

20.0

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLF341ER

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 13:14

Client Id:

B1L2C8

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

12/12/2006

SAF Nbr 107-010

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

Suffix

Distilled Volume Decant

File Id

FSuffix RTyp ΑV

Н

R

Batch # / Qc Type

6353659

DUP

Analyt/ CAS# I-129L

15046-84-1

Result/ Orig Rst -7.88E-02 7.65E-02

Tot/Cnt Unit Uncert 2S pCi/L 1.3E-01 1.3E-01

Test User

Qual MDC 2.19E-01 98.6

Tracer Yield

Spk Conc/ %Rec

Analy Method I129LL SEP L

Aliq Date/Time Size/ 3.8983E+00 01/25/2007

Analyzed UCL 0.0

RPD/ RER/ UCL 1.7

LCS LCL/UCL Typ D

L 13:10 20.0 3

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLFP21DR

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 09:28

Client Id:

B1KPP2

Matrix:

WATER

WATER Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

12/12/2006

SAF N S07-01		ntract Nbr 6-SBB-A19981	T	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix R AX	Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R - Typ
6353647 DUP	H-3 10028-17-8	-1.03E+02 -2.13E+01	pCi/L	1.5E+02 1.3E+02	U	3.28E+02	100.0		906.0_H3_L	SC 5.00E-03 L	01/06/2007 07:15	0.0 20.0	0.8 3		D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLFPN1CR

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 11:08

Client Id:

B1LD15

Matrix:

WATER

WATER

Sample On Date:

12/12/2006

Moisture/Solids%*:

QC Type:

DUP

Received Date:

SAF N S07-01		ntract Nbr -SBB-A19981	Т	est User	Case	Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix R' AY	Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R . Typ
6353645 DUP	Uranium 7440-61-1	2.63E+01 2.64E+01	ug/L	3.1E+00 3.1E+00		7.79E-0	2		UTOT_KPA	2.69E-02 ML	01/24/2007 16:44	.1 20.0	0. 3		D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

Analyt/

CAS#

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLFPQ1ER

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 13:17

Client Id:

B1LD10

Matrix: QC Type: WATER

WATER

Sample On Date:

Received Date: 12/12/2006

16:34

SAF Nbr

Contract Nbr

Case Nbr

Qu-

al

DUP

Tracer

Yield

FSuffix RTvp

S07-012

Batch # /

Qc Type

MW6-SBB-A19981

Result/

Orig Rst

Unit

Test User

Tot/Cnt

Uncert 2S

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

BA Η

Spk Conc/ %Rec

Analy Method

Aliq Date/Time Size/ Analyzed

RPD/ RER/ UCL UCL 11.2 0.6

20.0

3

LCS

LCL/UCL Typ

D

R

6353650 ALPHA 5.06E+01 pCi/L 1.3E+01 2.18E+00 100.0 9310_ALPHAB 2.019E-01 01/19/2007 12587-46-1 6.7E+00 DUP 4.52E+01 L

MDC

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLGW51DR

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/13/2006 08:47

Client Id:

B1LCX0

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

12/13/2006

SAF (ontract Nbr 6-SBB-A19981	7	est User	Case	Nbr S	SAS Nbr	Suffix	Decant	Distilled Volume	e Fil	e Id		FSuffix R BB	Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCI	R L Typ
6353646 DUP	U-234 13966-29-5	1.06E+01 1.22E+01	pCi/L	2.1E+00 1.1E+00		1.72E-01	100.2		UISO_PLATE	_ 2.008E-01 L	01/16/2007 14:20	14.3 20.0	1.1 3		D
6353646 DUP	U-235 15117-96-1	3.34E-01 4.29E-01	pCi/L	2.1E-01 2.0E-01		1.45E-01	100.2		UISO_PLATE	_ 2.008E-01 L	01/16/2007 14:20	24.9 20.0	0.6 3		D
6353646 DUP	U-238 U-238	1.11E+01 1.12E+01	pCi/L	2.2E+00 1.2E+00		1.72E-01	100.2		UISO_PLATE	_ 2.008E-01 L	01/16/2007 14:20	.7 20.0	0.1 3		D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLPE31HR

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

B1L1X9

Matrix:

WATER

WATER

Sample On Date:

12/14/2006

Moisture/Solids%*:

QC Type: DUP

Received Date:

SAF N I 107-009		ntract Nbr -SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	eld		FSuffix RT BC	Г ур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R . Typ
6353654	C-14	8.81E-02	pCi/L	6.5E+00	U	8.03E+00	100.0		C14_LSC	2.00E-01	01/19/2007	186.0	0.5	!	D
DUP	14762-75-5	2.43E+00		3.3E+00						L	12:25	20.0	3		

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLPE31JR

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

B1L1X9

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

12/14/2006

SAF N 107-00		ntract Nbr 6-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix I BD	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353655 DUP	TC-99 14133-76-7	6.41E+02 5.74E+02	pCi/L	4.4E+01 1.4E+01		9.27E+00	100.0		TC99_ETVDSI	K 1.253E-01 L	01/16/2007 05:30	11.0 20.0	2.1 3		D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLPE31KR

Sdg/Rept Nbr: W05078

34341

WATER

Collection Date: 12/14/2006 11:14

Client Id:

B1L1X9

Matrix:

WATER

Sample On Date:

Received Date:

Moisture/Solids%*:

7.70

QC Type: DUP

12/14/2006

SAF I 107-00		ontract Nbr /6-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant Di	stilled Volume	File	e ld		FSuffix BE	RТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- ai	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R CL Typ
6353657	BE-7	4.13E+00	pCi/L	2.4E+01	U	4.61E+0	1		GAMMALL_GS	1.9303E+00	01/17/2007	264.3	0.3		D
DUP	13966-02-4	-5.72E-01		2.4E+01						L	14:32	20.0	3		
6353657	CO-60	-1.34E-01	pCi/L	1.8E+00	U	3.65E+0)		GAMMALL_GS	1.9303E+00	01/17/2007	0.0	0.2		D
DUP	10198-40-0	9.16E-02		1.8E+00						L	14:32	20.0	3		
6353657	CS-134	-3.15E-01	pCi/L	2.4E+00	U	4.32E+0)		GAMMALL_GS	1.9303E+00	01/17/2007	0.0	0.3		D
DUP	13967-70-9	-8.29E-01		2.4E+00						· L	14:32	20.0	3		
6353657	CS-137	3.79E-02	pCi/L	1.6E+00	U	3.10E+0)		GAMMALL_GS	1.9303E+00	01/17/2007	169.7	0.4		D
DUP	10045-97-3	4.63E-01		1.6E+00						L	14:32	20.0	3		
6353657	EU-152	4.73E+00	pCi/L	4.6E+00	U	9.27E+0) .		GAMMALL_GS	1.9303E+00	01/17/2007	99.4	1.		D
DUP	14683-23-9	1.59E+00		4.6E+00						L	14:32	20.0	3		
6353657	EU-154	1.23E+00	pCi/L	7.6E+00	U	1.49E+0	1		GAMMALL_GS	1.9303E+00	01/17/2007	153.4	0.2		D
DUP	15585-10-1	1.62E-01		7.6E+00						L	14:32	20.0	3		
6353657	EU-155	-6.47E-01	pCi/L	3.6E+00	U .	6.35E+0)		GAMMALL_GS	1.9303E+00	01/17/2007	0.0	1.1		D
DUP	14391-16-3	-3.58E+00		3.6E+00						L	14:32	20.0	3		
6353657	K-40	-1.15E+00	pCi/L	3.3E+01	U	6.99E+0	i		GAMMALL_GS	1.9303E+00	01/17/2007	0.0	0.5		D
DUP	13966-00-2	-1.24E+01		3.3E+01						L	14:32	20.0	3		
6353657	RU-106	9.31E-01	pCi/L	1.7E+01	U	3.23E+0	1		GAMMALL_GS	1.9303E+00	01/17/2007	0.0	0.3		D
DUP	13967-48-1	-2.36E+00		1.7E+01						L	14:32	20.0	3		
6353657	SB-125	9.28E-01	pCi/L	4.7E+00	U	8.87E+0)		GAMMALL_GS	1.9303E+00	01/17/2007	0.0	0.9		D
DUP	14234-35-6	-2.08E+00		4.7E+00						L	14:32	20.0	3		

 $[\]label{eq:continuous} U\ \text{Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.}$

 $[\]label{eq:continuous} \mbox{\bf J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).}$

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLPE31LR

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/14/2006 11:14

Client Id:

B1L1X9

Matrix:

WATER

WATER

Sample On Date:

Received Date: 12/14/2006

Moisture/Solids%*:

Contract Nbr **Test User** QC Type:

DUP

SAF Nbr 107-009

MW6-SBB-A19981

Case Nbr

al

SAS Nbr

105.8

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp BF

Batch # / Qc Type 6353662

DUP

Analyt/ CAS# NP-237

13994-20-2

Result/ Orig Rst -2.48E-02 -1.64E-02

Unit Uncert 2S pCi/L 8.7E-02 8.7E-02

Tot/Cnt U

Qu-MDC 2.60E-01 Tracer Yield

Spk Conc/ Analy %Rec Method

NP237_LLE_P

Aliq Size/ 2.021E-01

Date/Time Analyzed 01/17/2007 RPD/ RER/ UCL UCL 0.0

LCL/UCL Typ

LCS R

Н

D

0.1 17:55 20.0 3

STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLF3X1EW

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 10:09

Sample On Date:

Client Id:

B1L279

Matrix: QC Type: WATER

WATER

Received Date:

12/12/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981

2.53E+03

Case Nbr

MS

SAS Nbr

Suffix Decant **Distilled Volume**

File Id

FSuffix RTyp ΑW Н

Batch # / Qc Type

107-010

Analyt/ Result/ CAS# Orig Rst

Tot/Cnt Unit Uncert 2S pCi/L 1.6E+02

Test User

Qu-MDC 8.33E+00 100.0

Spk Conc/ Tracer %Rec Yield 3.54E+03

Analy Method

Aliq Size/ TC99_ETVDSK 1.271E-01

Date/Time Analyzed 01/16/2007

RPD/ RER/ LCS UCL UCL

LCL/UCL Typ 60 D

R

6353655 TC-99 MS 14133-76-7

2.5E+01

71.5

02:21

140

STL Richland Oc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05078.Edd, h:\Reportdb\edd\FeadIV\Rad\34341.Edd

Lab Sample Id:

JLFPP1CW

Sdg/Rept Nbr: W05078

34341

Collection Date: 12/12/2006 11:55

Client Id:

B1LD20

Matrix:

QC Type:

WATER

WATER

Sample On Date:

Received Date:

12/12/2006

Moisture/Solids%*: SAF Nbr

Contract Nbr

Case Nbr

MS

Decant

S07-012

MW6-SBB-A19981

SAS Nbr

Suffix

Distilled Volume

File Id

FSuffix RTyp ΑZ Н

Batch # / Qc Type 6353645 Uranium

MS

Analyt/ CAS# 7440-61-1

Result/ Orig Rst 3.77E+01

Tot/Cnt Uncert 2S ug/L 1.4E+01 1.4E+01

Test User

Qu-MDC al 8.00E-02

Tracer Yield

Spk Conc/ %Rec 3.49E+01 108.0

Analy Method UTOT KPA

Aliq Size/ 2.62E-02 ML

Date/Time Analyzed 01/24/2007 16:48

RPD/ RER/ UCL UCL

LCS LCL/UCL Typ 60

R

D 140



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/23/2007 3:38:21 PM

Lot No., Due Date:

J6L180168; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353662; RNP237 Np-237 w/tracer

SDG, Matrix:

W05078; WATER

SDG, Matrix:	W05078; WATER	
8.0 Correction Calculati	on Protocol Used.	Yes No N/A
1	lethods Were Used To Analyze the Samples	Yes No N/A
	n the Appropriate Activity Units	Yes No N/A
	e Required QC Appropriate for the Method	Yes No N/A
L	r and QC Vials Where Used in the Samples	Yes No N/A
170 000000000 0 000 0000 0000 000	opriately Traced Before or After Fractionating the Sample	Yes No N/A
	um Sample Volume Was Used	Yes No N/A
8.07 The Correct Count OK	Geometry was Used.	Yes No N/A
	Counted for the Minimum Count Time or CRDL was Achieved.	Yes No N/A
8.09 Method Blank is wi	ithin Control Limits.	Yes No N/A
8.1 Comments:		
8.11 Matrix Blank is with No Matrix Blanks (MB		Yes No N/A
1	QAS Limit Value (No B Flag Necessary).	Yes No N/A
8.13 QAS Specified Dup OK (RPD)	olicate Equation Value within Control Limits.	Yes No N/A
8.14 LCS within Control OK	Limits.	Yes No N/A
8.15 MLCS within Contr No Matrix Spikes (ML		Yes No N/A
8.16 MS within Control I	The state of the s	Yes No N/A
8.17 Tracer within Contr		Yes No N/A
	e Minimum Tracer Yield (No Failed Samples)	Yes No N/A
8.19 Sample Specific M OK	DC <= CRDL.	Yes No N/A
8.2 Comments:		
8.21 Result < Lc, Activity No Limit Specified!	y Not Detected, U Flag.	Yes No N/A
No Positive Results	vity Not Detected, U Flag.	Yes No N/A
OK 8.23 Result <= Action Lo OK; No Action Level		Yes No N/A
OK; No Callin Level 8.24 Result + 3s >=0, N		Yes No N/A
	n are within FWHM Limits. => JLTJ81AC NP-237 88.1>0 Q:V1	Yes No N/A
STL Richland		Page 1
QAS_RADCALCv4.8.26		Page 1

8.26	Instruments have Current Calibrations.	Yes	No	N/A
	Correct Count Library Used. Library Not Specified => JLPE31AA I:[NUC_LIBR]ALPHA Q: JLPE31AL I:[NUC_LIBR]ALPHA Q: JLTJ81AA I:[NUC_LIBR]ALPHA Q: JLTJ81AC I:[NUC_LIBR]ALPHA Q:	Yes	No	N/A
8.28	Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	Ké≱s	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later v	Yeesic	nNe).	N/A
8.3 (Comments:			
8.31	Results Blank Subtracted as Appropriate. OK	Yes	No	N/A
,				
				and planty in the control of the con
Firet	Level Review Pan and Anderson Date 1-23.07			
	ichland	Da -: :		

QAS_RADCALCv4.8.26

Page 2



Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis		1.0(.)	11121(1)
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
 Is the Minimum Detectable Activity for the blank result ≤ the 			}
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	1		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?	/		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			Personal
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			·
Comments on any "No" response:			
		,	



OK; No Action Level Found => U-234

U-235 U-238

STL Richland

QAS_RADCALCv4.8.26

Data Review/Verification Checklist

1/23/2007 3:37:59 PM

Page 1

RADIOCHEMISTRY, First Level Review J6L130210, J6L140251; 01/29/2007 Lot No., Due Date: Client, Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6353646; RUISO Ulso by ALP SDG, Matrix: W05078; WATER 8.0 Correction Calculation Protocol Used. No N/A 8.01 The Appropriate Methods Were Used To Analyze the Samples Yes No N/A 8.02 Final Results Are in the Appropriate Activity Units Yes No N/A 8.03 Batch Contains the Required QC Appropriate for the Method Yes No N/A 8.04 The Correct Tracer and QC Vials Where Used in the Samples Yes No N/A 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample Yes No N/A 8.06 At Least the Minimum Sample Volume Was Used Yes No N/A $\bigcirc K$ 8.07 The Correct Count Geometry was Used. Yeş No N/A 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. Yes No N/A 8.09 Method Blank is within Control Limits. Yes No N/A OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. Yes No N/A No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). Yes No N/A 8.13 QAS Specified Duplicate Equation Value within Control Limits. Yes No N/A RPD > UCL: 20.0=> JLGW51AD U-235 25.0 (RPD) 8.14 LCS within Control Limits. Yeş No N/A 8.15 MLCS within Control Limits. N/A Yes No No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits. Yes No N/A No Matrix Spike Samples (MS) found in Batch! 8.17 Tracer within Control Limits. Yes No N/A Tracers Exceeds Control Limit => => JLGW51AA U-232 110 L:20|105 8.18 Samples are above Minimum Tracer Yield (No Failed Samples) Yes No N/A 8.19 Sample Specific MDC <= CRDL No N/A Yes∉ OK 8.2 Comments: 8.21 Result < Lc, Activity Not Detected, U Flag. Yes No N/A No Limit Specified! 8.22 Result < Mdc, Activity Not Detected, U Flag. Yes No N/A Batch Positive Result => JLDWG1AC U-234 2.5E+01 L:1.4E-01 JLDWG1AC U-235 7.6E-01 L:1.4E-01 JLDWG1AC U-238 2.3E+01 L:1.4E-01 JLGW51AA U-234 1.2E+01 L:1.7E-01 JLGW51AA U-235 4.3E-01 L:1.5E-01 JLGW51AA U-238 1.1E+01 L:1.5E-01 8.23 Result <= Action Level, when Defined. No N/A

OK; No Callin Level Found => U-234 U-235 U-238		ACTUAL CONTRACTOR CONT	
	Yes	No	N/A
8.25 Counting Spectrum are within FWHM Limits. FWHM > maxFWHM => JLDWG1AC U-234 44.3>0 JLGW51AA U-234 32.157>0 JLGW51AD U-234 26.019>0 JLTJN1AC U-234 26.092>0 Q:V1	Yes	No	N/A
The state of the s	Yes	No	N/A
8.27 Correct Count Library Used. Library Not Specified => JLDWG1AC I:[NUC_LIBR]AR_U. Q: JLGW51AA I:[NUC_LIBR]AR_U. Q: JLGW51AD I:[NUC_LIBR]AR_U. Q: JLTJN1AA I:[NUC_LIBR]AR_U. Q: JLTJN1AC I:[NUC_LIBR]AR_U. Q:	Yes	No	N/A
8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	16ès	No	N/A
8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later v	∧éess io	nNeò.	N/A
8.3 Comments:		***************************************	,, 24, 2, 2,
8.31 Results Blank Subtracted as Appropriate. OK	Yes	No	N/A

First Level Review

QAS_RADCALCv4.8.26

STL Richland

Pan anderson

Date __/-23.07



Review Item	Yes (√)	No (V)	N/A (√)
A. Sample Analysis		1.0(.)	17721(4)
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?	-		
B. QC Samples			-
 Is the Minimum Detectable Activity for the blank result ≤ the 			}
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	/.		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			·
Comments on any "No" response:			À
i.	· · · · · · · · · · · · · · · · · · ·		
		·	



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/23/2007 11:39:25 AM

Lot No., Due Date:

J6L140151,J6L140110,J6L140107; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353650; RALPHA-A Alpha by GPC-Am

SDG, Matrix: W05078; WATER

SDG, Watrix. WUSU/8; WATER			
8.0 Correction Calculation Protocol Used. OK	Yes	No	N/A
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	Yes	No	N/A
8.02 Final Results Are in the Appropriate Activity Units OK	Yea	No	N/A
8.03 Batch Contains the Required QC Appropriate for the Method OK	Yes	No	N/A
8.04 The Correct Tracer and QC Vials Where Used in the Samples OK	Yes	No	N/A
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	Yes	No	N/A
8.06 At Least the Minimum Sample Volume Was Used	Yes	No	N/A
Analysis Volume => JLFP21AC 115.70<200.00 JLF2P1AC 159.20<200.00 Q:VB 8.07 The Correct Count Geometry was Used.		W	Y 100°00 - 000000000000000
OK	<u> </u>		N/A
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	Yes	No	N/A
8.09 Method Blank is within Control Limits. OK	Yes	No	N/A
8.1 Comments:		************************	All-OVE in the company
8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch!	Yes	No	N/A
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	Yes	No	N/A
8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD)	Yes	No	N/A
8.14 LCS within Control Limits. OK	Yes	No	N/A
8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!	Yes	No	N/A
8.16 MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!	Yes	No	N/A
8.17 Tracer within Control Limits. OK	Yes	No	N/A
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) OK	Yea	No	N/A
8.19 Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	Yes	No	N/A
8.22 Result < Mdc, Activity Not Detected, U Flag. Batch Positive Result =>	Yes	No	N/A
JLFPQ1AA ALPHA 4.5E+01 L:1.9E+00 JLFP21AC ALPHA 5.9E+00 L:1.9E+00	•		
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => ALPHA OK; No Callin Level Found => ALPHA	Yes	No	N/A
8.24 Result + 3s >=0, Not Too Negative. OK	Yes	No	N/A
STL Richland		Amenina	ASSESSED MANAGEMENT
QAS_RADCALCv4.8.26	Page	7	

6 Instruments have Current Calibrations. 7 Correct Count Library Used.	Yes	No	ليتوات
	Voc		N/A
No Count Library found in Batch Data!	162	No	N/A
8 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later v	ersion \∕sès	No	N/A
9 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in I	ater v res io	on Neo) .	N/A
Comments:	NA3864000000000000000000000000000000000000		
Results Blank Subtracted as Appropriate. OK	Yes	No	N/A
	Part Personners and contract an	www.achentala	44 E-MANGACOTTO CONTRACTOR
st Level Review X Date 1/23/07			

STL Richland
QAS_RADCALCv4.8.26

1-23-07

Page 2



Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis		1	17711(4)
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	d' :		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
1. Is the Des symmonth Detectable Activity \(\) the Contract Detection Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			+
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?		1	
6. Were units checked?			
Comments on any "No" response:			·
		,	
•			



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/23/2007 11:48:26 AM

Lot No., Due Date:

J6L140151,J6L140107; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353651; RBETA-SR Beta by GPC-Sr/Y

8.0 Correction Calculation Protocol Used. OK 8.01 The Appropriate Methods Were Used To Analyze the Samples OK 8.02 Final Results Are in the Appropriate Activity Units OK 8.03 Batch Contains the Required QC Appropriate for the Method OK 8.04 The Correct Tracer and QC Vials Where Used in the Samples OK 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK 8.06 At Least the Minimum Sample Volume Was Used OK 8.07 The Correct Count Geometry was Used. OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.1 Comments: 8.11 Matrix Blanks (MBiks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.15 MLCS within Control Limits. OK 8.16 MCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes Yes Yes Yes Yes Yes Yes Yes Yes	No No No No	N/A N/A N/A N/A N/A
8.01 The Appropriate Methods Were Used To Analyze the Samples OK 8.02 Final Results Are in the Appropriate Activity Units OK 8.03 Batch Contains the Required QC Appropriate for the Method OK 8.04 The Correct Tracer and QC Vials Where Used in the Samples OK 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK 8.06 At Least the Minimum Sample Volume Was Used OK 8.07 The Correct Count Geometry was Used. OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBiks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes Yes Yes Yes Yes Yes Yes	No No No No	N/A N/A N/A
OK 8.03 Batch Contains the Required QC Appropriate for the Method OK 8.04 The Correct Tracer and QC Vials Where Used in the Samples OK 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK 8.06 At Least the Minimum Sample Volume Was Used OK 8.07 The Correct Count Geometry was Used. OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBiks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes Yes Yes Yes Yes	No No No	N/A N/A N/A
OK 8.04 The Correct Tracer and QC Vials Where Used in the Samples OK 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK 8.06 At Least the Minimum Sample Volume Was Used OK 8.07 The Correct Count Geometry was Used. OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBiks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK MLCS within Control Limits. OK MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes Yes Yes Yes Yes	No No	N/A N/A
OK 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK 8.06 At Least the Minimum Sample Volume Was Used OK 8.07 The Correct Count Geometry was Used. OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.11 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes Yes Yes Yes	No No	N/A
OK 8.06 At Least the Minimum Sample Volume Was Used OK 8.07 The Correct Count Geometry was Used. OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blank is within Control Limits. No Matrix Blank (MBiks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes Yes Yes	No	
OK 8.07 The Correct Count Geometry was Used. OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.11 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yea	5 // M4 - 46 54// 1977	
OK 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK 8.09 Method Blank is within Control Limits. OK 8.11 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes	No	N/A
OK 8.09 Method Blank is within Control Limits. OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	<u> </u>		N/A
OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yeş	No	N/A
 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits. 	W	No	N/A
No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	adderen van de versche		AN OTHER MANAGEMENT AND ADDRESS OF THE PARTY
OK 8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes	No	N/A
OK (RPD) 8.14 LCS within Control Limits. OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes	No	N/A
OK 8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes	No	N/A
No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yes	No	N/A
	Yes	No	NA
No Matrix Spike Samples (MS) found in Batch!	Yes	No	N/A
8.17 Tracer within Control Limits. OK	Yes	No	N/A
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) OK	Yes	No	N/A
8.19 Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2 Comments:	HETEKNISSI TEL WAS ALIVERSON OPPOSET OF SHAPE S CONTRACTORS		w.ini=www.uw
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	Yes	No	N/A
8.22 Result < Mdc, Activity Not Detected, U Flag. Batch Positive Result => JLFPQ1AC BETA 3.7E+01 L:2.9E+00 JLF2P1AD BETA 1.1E+02 L:2.8E+00	Yes	No	N/A
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => BETA OK; No Callin Level Found => BETA	Yes	No	N/A
8.24 Result + 3s >= 0, Not Too Negative. OK	Yeş	No	N/A
8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	N/A
STL Richland QAS_RADCALCv4.8.26	X20C (014)2-011-011-011-011-011-01-01-01-01-01-01-0	1	Angeles Commen

8.26	Instruments have Current Calibrations.	Yes	No	N/A
	Correct Count Library Used.	Yes	No	N/A
8.28	No Count Library found in Batch Data! Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version.)	nkės	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	Mées io	n ineo).	N/A
	Comments:		alla dell'observable a papego je se	
	Results Blank Subtracted as Appropriate.	Voa	Na	N/A
	OK	Yes	INO	IN/A
	$\mathcal{O} \cap \mathcal{O} = \mathcal{O} \cap \mathcal{O}$			
Firs	ichland 1-33-07		_	

QAS_RADCALCv4.8.26



Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis		1	1 2 7 7
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			.
3. Are the correct isotopes reported?			
B. QC Samples			
 Is the Minimum Detectable Activity for the blank result ≤ the 			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	7.		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			- [
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			·
3. Was the correct methodology used? 4. Was transcription checked? 5. Were all calculations checked at a minimum frequency? 6. Were units checked? Comments on any "No" response:			
	No control of the special and a second secon		
		-	***



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/23/2007 11:29:52 AM

Lot No., Due Date:

J6L130210,J6L140156,J6L140161,J6L180168; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353661; RSR85907 Sr-85/90 by GPC-7

SDG, Matrix:

W05078; WATER

UL	o, matrix. wood/s; water			
	COC Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
2.0 2.1	QC Batch Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yeş	No	N/A
2.2	Are the QC appropriate for the analysis included in the batch?	Yes	No	N/A
2.3	Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes	No	N/A
2.4	Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A
	QC & Samples Is the blank results, yield, and MDA within contract limits?	Yes	No	N/A
3.2	Is the LCS result, yield, and MDA within contract limits?	Yes	No	N/A
3.3	Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A
3.4	Are the duplicate result, yields, and MDAs within contract limits?	Yeş	No	N/A
3.5	Are the sample yields and MDAs within contract limits?	Yes	No	N/A
	Raw Data Were results calculated in the correct units?	Yes	No	N/A
	Were analysis volumes entered correctly?	Yeş	No	N/A
~~~~	Were Yields entered correctly?	Yes	No	N/A
gasquoor y ng	Were spectra reviewed/meet contractual requirements?	Yes	No	N/A
100500	Were raw counts reviewed for anomalies?	Yes	No	N/A
	Other Are all nonconformances included and noted?	Yes	No	N/A
	Are all required forms filled out?	Yea	No	N/A
5.3	Was the correct methodology used?	Yes	No	N/A
	Was transcription checked?	Yes	No	N/A
	Were all calculations checked at a minimum frequency?	Yes	No	N/A
	Are worksheet entries complete and correct?	Yes	No	N/A
3.0	Comments on any No response:	Marie Commission of the Commis	YOUTHE VALUE OF THE OWNER.	Mad States in Secundarians

First Level Review

Lutonson

Pan andreser

Date

(123/07)



Review Item	Yes (√)	No (1)	N/A (\(\frac{1}{2}\)
A. Sample Analysis			- 2712(1)
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?	-	ļ	.
3. Are the correct isotopes reported?			
B. QC Samples			
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	/ /		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?			
	/		
3. Do the MS/MSD results and yields meet acceptance criteria?  3. Do the duplicate sample results and yields meet acceptance			
criteria?		1.	
C. Other			<del></del>
. Are all Nonconformances included and noted?			
2. Are all required forms filled out?	ļ		
B. Was the correct methodology used?	<del>                                     </del>		
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
5. Were units checked?	-		· · · · · · · · · · · · · · · · · · ·
Comments on any "No" response:			:



## Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/23/2007 3:38:52 PM

Page 1

Lot No., Due Date:

J6L140151,J6L180168; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353657; RGAMMA Gamma by GER

SDG, Matrix:

QAS_RADCALCv4.8.26

W05078; WATER

ary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  ary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  ary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  ary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  al Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  ksheets include a Tracer Vial label for each sample?  les  sults, yield, and MDA within contract limits?  ult, yield, and MDA within contract limits?  are results, yields, and MDAs within contract limits?  are yields and MDAs within contract limits?  valuated in the correct units?  volumes entered correctly?  reviewed/meet contractual requirements?	Yes Yes Yes Yes Yes Yes Yes	No No No No No	N/A N/A N/A N/A N/A N/A
ary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  appropriate for the analysis included in the batch?  al Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  ksheets include a Tracer Vial label for each sample?  les  sults, yield, and MDA within contract limits?  ult, yield, and MDA within contract limits?  SD results, yields, and MDAs within contract limits?  ate result, yields, and MDAs within contract limits?  a yields and MDAs within contract limits?  volumes entered correctly?	Yes Yes Yes Yes Yes Yes Yes	No No No No No	N/A N/A N/A N/A N/A N/A
ary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  apropriate for the analysis included in the batch?  all Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  ksheets include a Tracer Vial label for each sample?  les  sults, yield, and MDA within contract limits?  ult, yield, and MDA within contract limits?  SD results, yields, and MDAs within contract limits?  ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  volumes entered correctly?  intered correctly?	Yes Yes Yes Yes Yes Yes Yes	No No No No	N/A N/A N/A N/A N/A
al Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  ksheets include a Tracer Vial label for each sample?  les sults, yield, and MDA within contract limits?  ult, yield, and MDA within contract limits?  SD results, yields, and MDA within contract limits?  ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  valuated in the correct units?  volumes entered correctly?	Yes Yes Yes Yes Yes Yes	No No No No	N/A N/A N/A N/A
ksheets include a Tracer Vial label for each sample?  les sults, yield, and MDA within contract limits?  sD results, yields, and MDA within contract limits?  ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  salculated in the correct units?  volumes entered correctly?	Yes Yes Yes Yes	No No No No	N/A N/A N/A
les sults, yield, and MDA within contract limits?  ult, yield, and MDA within contract limits?  SD results, yields, and MDA within contract limits?  ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  calculated in the correct units?  volumes entered correctly?	Yes Yes Yes Yes	No No No	N/A N/A N/A
sults, yield, and MDA within contract limits?  SD results, yields, and MDA within contract limits?  ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  calculated in the correct units?  volumes entered correctly?	Yes Yes Yes	No No No	N/A
sults, yield, and MDA within contract limits?  SD results, yields, and MDA within contract limits?  ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  calculated in the correct units?  volumes entered correctly?	Yes Yes Yes	No No No	N/A
SD results, yields, and MDAs within contract limits?  ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  calculated in the correct units?  volumes entered correctly?	Yes Yes	No No	N/A
ate result, yields, and MDAs within contract limits?  e yields and MDAs within contract limits?  calculated in the correct units?  volumes entered correctly?  Intered correctly?	Yes Yes	No	V
e yields and MDAs within contract limits?  calculated in the correct units?  volumes entered correctly?  intered correctly?	Yes		N/A
volumes entered correctly? ntered correctly?	V	No	
volumes entered correctly? ntered correctly?	Yes		N/A
ntered correctly?	35	No	N/A
	Yes	No	N/A
reviewed/meet contractual requirements?	Yes	No	N/A
	Yes	No	N/A
nts reviewed for anomalies?	Yes	No	N/A
formances included and noted?	Yes	Nο	NI/A
d forms filled out?			$\checkmark$
d forms filled out:	Yes	NO	IV/A
ct methodology used?	Yes	No	N/A
ion checked?	Yeş	No	N/A
lations checked at a minimum frequency?	Yes	No	N/A
entries complete and correct?	Yes	No	N/A
any No response:			
	ion checked? lations checked at a minimum frequency? entries complete and correct?	ion checked?  Iations checked at a minimum frequency?  The entries complete and correct?  Yes  Yes	ion checked?  Iations checked at a minimum frequency?  Interest complete and correct?  Yes No



Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis		+======================================	11/21(4)
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?	-		
3. Are the correct isotopes reported?			
B. QC Samples			
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>			
Contract Detection Limit?			1
2. Does the blank result meet the Contract criteria?	//		
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			·
Comments on any "No" response:			



### Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/26/2007 2:06:14 PM

Page 1

Lot No., Due Date:

J6L140156,J6L180168; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353659; RGAMLEPS Gamma by LEPS

SDG. Matrix:

QAS_RADCALCv4.8.26

W05078; WATER

SD	i, Matrix: W05078; WATER			
1.0 1.1	COC s the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yeş	No	N/A
<b>2.0</b> 2.1	QC Batch Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yeş	No	N/A
	Are the QC appropriate for the analysis included in the batch?	V		
		Yes	NO	N/A
2.3	s the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes	No	N/A
2.4	Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A
	QC & Samples s the blank results, yield, and MDA within contract limits?	Yes	No	N/A
3.2	s the LCS result, yield, and MDA within contract limits?	Yes	No	N/A
3.3	are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A
3.4	are the duplicate result, yields, and MDAs within contract limits?	Yeş	No	₩ N/A
3.5	are the sample yields and MDAs within contract limits?	Yes		
	Raw Data Vere results calculated in the correct units?	Yeş	No	N/A
1.2	Vere analysis volumes entered correctly?	Yes	No	N/A
1.3	Vere Yields entered correctly?	Yes	No	N/A
1.4	Vere spectra reviewed/meet contractual requirements?	Yes	No	™/A
1.5	Vere raw counts reviewed for anomalies?	Yeş	No	N/A
	Other re all nonconformances included and noted?	Yes	No	N/A
5.2	re all required forms filled out?	Yeş	No	W/ N/A
5.3	/as the correct methodology used?	₩ Yeş		
5.4	/as transcription checked?	Yeş		
5.5	/ere all calculations checked at a minimum frequency?	Yes	· · · · · · · · · · · · · · · · · · ·	
5.6	re worksheet entries complete and correct?	Yeş	No	N/A
6.0	omments on any No response:	<u> </u>		
	The state of the s		***************	
- irs	Level Review Pan Underson Date 1-2607			
	chland	Page	1	·····



Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis		1	1,11(1)
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?		į	.
3. Are the correct isotopes reported?			
B. QC Samples			
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>			
Contract Detection Limit?		***	
2. Does the blank result meet the Contract criteria?	2000		
3. Is the blank result < the Contract Detection Limit?	/.		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
B. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency? 6. Were units checked?			
). Were units checked?			·



## Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/17/2007 4:44:46 PM

Lot No., Due Date:

J6L140151,J6L140156,J6L180168; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353655; RTC99 Tc-99 by LSC

SDG, Matrix: W05078; WATER

SDG, Matrix:	W05078; WATER			
1	ulation Protocol Used.	Yeş	No	N/A
OK 8.01 The Appropriat	e Methods Were Used To Analyze the Samples	Yeş	No	N/A
OK		<u> </u>		
8.02 Final Results A	re in the Appropriate Activity Units	Yes	No	N/A
8.03 Batch Contains	the Required QC Appropriate for the Method	Yeş	No	N/A
OK 8.04 The Correct Tr	acer and QC Vials Where Used in the Samples	Ves	Nο	N/A
l .	/ial => JLF3X1AE TCSG<>TCSE Q:V9	703	Ÿ	14/74
, , ,	ppropriately Traced Before or After Fractionating the Sample	Yes	No	N/A
OK 8.06 At Least the Mi	nimum Sample Volume Was Used	Yeş	No	N/A
OK				
8.07 The Correct Co	ount Geometry was Used.	Yeş	No	N/A
1	as Counted for the Minimum Count Time or CRDL was Achieved.	Yeş	No	N/A
OK 9 00 Mothod Blank i	s within Control Limits.	Vag	No	N/A
OK	5 WILLIII COLLO LITILS.		140	11/7
8.1 Comments:				
8.11 Matrix Blank is	within Control Limits.	Yes	No	N/A
	(MBlks) found in Batch!			V
8.12 Method Blank(s	s) < QAS Limit Value (No B Flag Necessary).	Yes	No	N/A
	Duplicate Equation Value within Control Limits.	Yeş	No	N/A
OK (RPD)	111.	V	81	81/A
8.14 LCS within Cor	ttroi Limits.	Tes V	NO	N/A
8.15 MLCS within C		Yes	No	N/A
No Matrix Spikes 8.16 MS within Cont	(MLCS) found in Batch!	Yes	No	N/A
OK		V		
8.17 Tracer within C		Yes	No	N/A
No Tracers found 8.18 Samples are at	oove Minimum Tracer Yield (No Failed Samples)	Yes	No	N/A
No Tracers found	in Batch!			V
8.19 Sample Specifi OK	c MDC <= CRDL.	Yes	No	N/A
8.2 Comments:	,		**************	
8 21 Result < Lc Ad	tivity Not Detected, U Flag.	Yes	No	N/A
No Limit Specified	<u> </u>			V
1	Activity Not Detected, U Flag.	Yes	No	N/A
No Positive Resul OK Calc_IDL No		\$ <b>\$</b>		
1	on Level, when Defined.	Yes	No	N/A
	evel Found => TC-99			
OK; No Callin L 8.24 Result + 3s >=0	evel Found => TC-99	Vee	Nα	/ N/A
	_TJ41AA TC-99 -4.5E-01	165	Ÿ	
	trum are within FWHM Limits.	Yes	No	N/A
No FWHM found	IN BATCH DATA!			<b></b>
STL Richland		<b>.</b>		***************************************
QAS_RADCALCv4.8.26	3	Page	3	

8.26 Instruments have Current Calibrations.	/es	No	N/A
No Count Library found in Batch Data!	⁄es		V
8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version)			
8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later 🕅	<b>∉es</b> io	ned.	N/A
8.3 Comments:			
8.31 Results Blank Subtracted as Appropriate.  OK	∕es	No	N/A
First Level Review Pan and Conderson Date 1-17-07			

STL Richland QAS_RADCALCv4.8.26



QC Batch Number:	6353655	
•	W05078 .	

A. Sample Analysis  1. Are the sample yields within acceptance criteria?  2. Is the sample Minimum Detectable Activity < the Contract  Detection Limit?			$N/A(\sqrt{)}$
<ol> <li>Is the sample Minimum Detectable Activity &lt; the Contract Detection Limit?</li> </ol>		No (√)	- :: - : ( )
<ol> <li>Is the sample Minimum Detectable Activity &lt; the Contract Detection Limit?</li> </ol>			
Detection Limit?			
			.
3. Are the correct isotopes reported?			
B. QC Samples			
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	25		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
B. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?	- Commence		
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?		<u> </u>	
B. Was the correct methodology used?			
4. Was transcription checked?			<del></del>
5. Were all calculations checked at a minimum frequency?		1.	
6. Were units checked?			



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/9/2007 4:50:39 PM

Lot No., Due Date: J6L140151,J6L140161,J6L140110; 01/29/2007 Client, Site: 384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353647; RTRITIUM H-3 by LSC

SDG, Matrix: W05078; WATER

3.0 Correction Calculation Protocol Used.	Yes No N/A
OK 3.01 The Appropriate Methods Were Used To Analyze the Samples	Yeş No N/A
OK 3.02 Final Results Are in the Appropriate Activity Units	Yeş No N/A
ОК	. V
Batch Contains the Required QC Appropriate for the Method OK	Yes No N/A
.04 The Correct Tracer and QC Vials Where Used in the Samples OK	Yes No N/A
.05 Sample was Appropriately Traced Before or After Fractionating the Sample	Yes No N/A
OK .06 At Least the Minimum Sample Volume Was Used	Yes No N/A
Analysis Volume => JLFP21AA 5.00<10.00 JLF2P1AA 5.00<10.00 JLF421AA 5.00<10.00 Q:VB	
.07 The Correct Count Geometry was Used.	Yes No N/A
Count Geometry => JLTJP1AF SVP15/5<>SVP10/10 JLTJP1AG SVP15/5<>SVP10/10 JLTJP1AA SVP15/5<>SVP10/10 JLTJP1AC SVP15/5<>SVP10/10 JLTJP1AD SVP15/5<>SVP10/10 JLTJP1AB SVP15/5<>SVP10/10 JLTJP1AE SVP15/5<>SVP10/10 JLFP21AA SVP15/5<>SVP10/10 JLFP21AA SVP15/5<>SVP10/10 JLFP21AA SVP15/5<>SVP10/10 JLF21AA SVP15/5<>SVP10/10 JLF21AA SVP15/5<>SVP10/10	
.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved.  OK	Yes No N/A
.09 Method Blank is within Control Limits.	Yes No N/A
.1 Comments:	
.11 Matrix Blank is within Control Limits. OK	Yes No N/A
.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	Yes No N/A
.13 QAS Specified Duplicate Equation Value within Control Limits.  RPD > UCL : 20.0=> JLFP21AD H-3 1900.0 (RPD)	Yes No N/A
.14 LCS within Control Limits.	Yeş No N/A
OK .15 MLCS within Control Limits.	Vog No N/A
OK	Yes No N/A
.16 MS within Control Limits.	Yes No N/A
No Matrix Spike Samples (MS) found in Batch!  17 Tracer within Control Limits.	Yes No N/A
No Tracers found in Batch!	Tes No N/
.18 Samples are above Minimum Tracer Yield (No Failed Samples)	Yes No N/A
No Tracers found in Batch!  19 Sample Specific MDC <= CRDL.	Yeş No N/A
OK .	
.2 Comments:	
.21 Result < Lc, Activity Not Detected, U Flag.  No Limit Specified!	Yes No N/A
.22 Result < Mdc, Activity Not Detected, U Flag.	Yeş No N/A
No Positive Results OK Calc IDL Not Calculated	V
TL Richland	r .
AS_RADCALCv4.8.26	Page 1

8.23	Result <= Action Level, when Defined.	Yes	No	N/A
	OK; No Action Level Found => H-3	l es	NO	IV/A
	OK; No Callin Level Found => H-3			
8.24	Result + 3s >=0, Not Too Negative.  OK	Yes	No	N/A
8.25	Counting Spectrum are within FWHM Limits.	Yes	No	N/A
	No FWHM found in Batch Data!			$\mathbf{V}$
8.26	Instruments have Current Calibrations.	Yes	No	N/A
8.27	Correct Count Library Used.	Yes	No	N/A
	No Count Library found in Batch Data!			V
8.28	Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	n <b>Ysès</b>	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	∨ <b>Yéess</b> io	Di <b>Meò</b> .	N/A
8.3	Comments:			
8 21	Results Blank Subtracted as Appropriate.		N	<b>1</b> 1/4
0.01	OK	Yes	NO	N/A

First Level Review <u>Pam</u>

Date 1-10-07



Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number:	6353647
	W05078 .

	Yes (√)	No (1)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			1
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>		-	
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
B. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			·
. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
5. Were units checked?			



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/24/2007 3:49:38 PM

Lot No., Due Date:

J6L180168; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353654; RC14 C-14 by LSC

SDG, Matrix: W05078; WATER

SDG, Matrix:	W05078; WATER			
8.0 Correction Calculation		Yes	No	N/A
8.01 The Appropriate M No Samples found in	ethods Were Used To Analyze the Samples Batch!	Yes	No	N/A
	n the Appropriate Activity Units	Yes	No	N/A
	Required QC Appropriate for the Method	Yeş	No	N/A
	r and QC Vials Where Used in the Samples	Yeş	No	N/A
P. Commission of the commissio	priately Traced Before or After Fractionating the Sample	Yes	No	N/A
8.06 At Least the Minim	um Sample Volume Was Used	Yeş	No	N/A
8.07 The Correct Count	Geometry was Used.	Yeş	No	N/A
	Counted for the Minimum Count Time or CRDL was Achieved.	Yeş	No	N/A
OK 8.09 Method Blank is wi	thin Control Limits.	Yes	No	N/A
8.1 Comments:		<u> </u>	OX SECURITION OF THE PROPERTY.	
8.11 Matrix Blank is with		Yes	No	N/A
	QAS Limit Value (No B Flag Necessary).	Yeş	No	N/A
	Dicate Equation Value within Control Limits.  JLPE31AH C-14 190.0 (RPD)  John Less than MD4 deepok 1-24.07	Yes	No	N/A
8.14 LCS within Control OK	Limits.	Yes	No	N/A
8.15 MLCS within Contro No Matrix Spikes (MLC		Yes	No	N/A
8.16 MS within Control L		Yes	No	N/A
8.17 Tracer within Contr	ol Limits.	Yes	No	N/A
8.18 Samples are above	e Minimum Tracer Yield (No Failed Samples)	Yes	No	N/A
No Tracers found in Bass 8.19 Sample Specific MI	DC <= CRDL.	Yes	No	N/A
No Results found in Ba 8.2 Comments:	alcn!		regerment of the Australian States	<u> </u>
8.21 Result < Lc, Activity No Limit Specified!	y Not Detected, U Flag.	Yes	No	N/A
8.22 Result < Mdc, Activ	rity Not Detected, U Flag.	Yeş	No	N/A
OK Calc_IDL Not Cal 8.23 Result <= Action Le				THE SECTION SECTION
OK; No Action Level F		Yes	No	N/A
OK; No Callin Level				
8.24 Result + 3s >=0, N OK		Yes	No	N/A
8.25 Counting Spectrum  No FWHM found in Ba		Yes	No	N/A
STL Richland		oc.normodelistatud pro (4000)> )- roman mili (2000)-inimedeli-markeli (2000)-	**************************************	a.secundosina.ee
QAS_RADCALCv4.8.26		Page	1	

8.26	Instruments have Current Calibrations.	Yes	No	N/A
	Correct Count Library Used.  No Count Library found in Batch Data! Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version.	Yes		V
	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later			
8.3	Comments:	MANAGEMENT OF THE STATE OF THE		
8.31	Results Blank Subtracted as Appropriate.  OK	Yes	No	N/A
+0001X10011X10XXX			DOMESTIC LEGIS	i-reconductories custamen
	St Level Review Magla Johns Pam Andus Date 1-34-01			
	Richland _RADCALCv4.8.26	Page	2	



Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number:	4353454
	WO 5078.

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			.
3. Are the correct isotopes reported?			
B. QC Samples			
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	1		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other	ł		
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/25/2007 12:02:00 PM

Lot No., Due Date:

J6L130210,J6L140170,J6L140107,J6L140291,J6L140251; 01/29/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353645; RUNAT UNat by KPA

SDG, Matrix:

W05078; WATER

SDG, Matrix:	W05078; WATER				
1.0 COC 1.1 Is the ICOC page of	omplete; includes all applicable analysis, dates, SOP numbe	ers, and revisions?	Yes	No	N/A
<b>2.0 QC Batch</b> 2.1 Do the Summary/D	etailed Reports include a calculated result for each sample l	listed on the QC Batch Sheet?	Yes	No	N/A
2.2 Are the QC approp	riate for the analysis included in the batch?		Yes	No	N/A
2.3 Is the Analytical Ba	tch Worksheet complete; includes as appropriate, volumes,	count times, etc?	Yes	No	N/A
2.4 Does the Workshe	ets include a Tracer Vial label for each sample?		Yes	No	N/A
3.0 QC & Samples 3.1 Is the blank results	, yield, and MDA within contract limits?		Yes	No	N/A
3.2 Is the LCS result, y	ield, and MDA within contract limits?		Yes	No	N/A
3.3 Are the MS/MSD re	sults, yields, and MDA within contract limits?	The second secon	Yes	No	N/A
3.4 Are the duplicate re	esult, yields, and MDAs within contract limits?		Yes	No	N/A
3.5 Are the sample yiel	ds and MDAs within contract limits?		Yes	No	N/A
<b>4.0 Raw Data</b> 4.1 Were results calcul	ated in the correct units?		Yes	No	N/A
1.2 Were analysis volu	mes entered correctly?		Yes	No	N/A
4.3 Were Yields entere	d correctly?	THE STREET OF COURSE C. STREET OF THE STREET, AND ADMINISTRATION OF STREET, AND ADMINISTRATION ADMINISTRATION ADMINISTRATION AND ADMINISTRATION ADMINISTRATION ADMINISTRATION AND ADMINISTRATION ADMINISTR	Yes	No	N/A
1.4 Were spectra revie	wed/meet contractual requirements?		Yes	No	N/A
4.5 Were raw counts re	eviewed for anomalies?		Yes	No	N/A
5.0 Other 5.1 Are all nonconform	ances included and noted?		Yes	No	N/A
5.2 Are all required form	ns filled out?		Yes	No	N/A
5.3 Was the correct me	ethodology used?		Yes	No	N/A
5.4 Was transcription o	hecked?		Yes	No	N/A
5.5 Were all calculation	ns checked at a minimum frequency?	to stitutioning and anti-material constraints of the state of the stat	Yes	No	N/A
5.6 Are worksheet entri	es complete and correct?	and the same of th	Yes	No	N/A
6.0 Comments on any	No response:				
	A CONTROL OF A CON				
First Level Review _	Pan anderson	Date/-2			
STL Richland QAS_RADCALCv4.8.26			Page	1	



### Data Review Checklist RADIOCHEMISTRY Second Level Review

OC Batch Number: 6353645

Review Item	Yes (√)	No (1)	N/A (V)
A. Sample Analysis			1
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples	j.		
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?	V		
2. Does the blank result meet the Contract criteria?	\sqrt{i}		
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample		,	1
result < the Contract Detection Limit?	٠,		
5. Is the LCS recovery with contract acceptance criteria?	1		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?		,	
B. Do the MS/MSD results and yields meet acceptance criteria?	V		
Do the duplicate sample results and yields meet acceptance			
criteria?		1	
C. Other			
. Are all Nonconformances included and noted?			
?. Are all required forms filled out?	1		
Was the correct methodology used?	1		
. Was transcription checked?	1		
. Were all calculations checked at a minimum frequency?	1		
. Were units checked?	1		· · · · · · · · · · · · · · · · · · ·
Comments on any "No" response:			
			,
			· · · · · · · · · · · · · · · · · · ·
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W05078
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C.O.C. #

TIME CE	111050	078	5		<b>CHAIN OF</b>	CUSTODY/	SAMPLE ANAL	YSIS REQUEST		S07-012-380		
Collector LUOR H		de	ee 07.	25-6	7					Page <u>1</u> of <u>1</u>		
CollectoFLUOR H M.R.	WEIL				Contact/I Dot Ste			FAX				
SAF No. S07-012					Sampling Hanfor	Origin		509-376-5056 Purchase Order	Purchase Order/Charge Code			
Project Title SURV, DECEM	IBER 2006					HNF - N-	506-J	Ice Chest No. S	ce Chest No. SAUS - 115 Temp.			
Shinned To (Lah) Severn Trent Inc	-consistent in exercises in consistent in the consistent in the consistency of the consis	ahlan d			Method o	of Shipment			Bill of Lading/Air Bill No.			
Protocol SURV	COURTAINED AT	Cmano	Philipping on an incident and and habitatic and an incident and an incident and an incident and an incident an		GOVI.		ority: 45 Days	Offsite Property	No.			
POSSIBLE SAMI	dioactive Materi	al at co	ncentrations that	are not regula	ted for transportation per	49 CFR but are not	closure of 14 days.	Hold Time I PNNL samples submitted under A uples submitted into one SDG, daily	, G, I, S, and W 07 S.	vity Exemption: Yes ✓ No ☐ AFs into one SDG, not to exceed SDG		
Sample No.	Lab ID	*	Date	Time	No/Type Container	•	Sample A	Analysis		Preservative		
B1LCY0		W	12/11/6	1217	1x20-mL P	Activity Scan			None			
B1LCY0		W		,	3x1000-mL G/P	SRISO_SEP_PR	ECIP_GPC: Sr-90 (1)		HNO3 to pH <2			
B1LCY0		W			1x1000-mL G/P	UISO_PLATE_A	EA: List-1 (3)		HNO3 to pH <2			
B1LCY0		W	V	٧	1x500-mL G/P	UTOT_KPA: Urar	nium (1)	***************************************	HNO3 to pH <2			
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RELUGRIHANEC M.R. WEIL	ORD Print		Sign	TIEC 1	Date/Time /5	Received By	Print Sign	Date/Time/\(\) DEC 1 1 2006		Matrix *		
Relinquished By				UCU-I-	Date/Time	Received By	200000	Date/Time	SO = SL =	Soil         DS         = Drum Solid           Sediment         DL         = Drum Liqui           Solid         T         = Tissue           Sludge         WI         = Wine           Water         L         = Liquid		
Relinquished By					Date/Time	Received By		Date/Time	O =	Oil V = Vegetation Air X = Other		
Relinquished By			-		Date/Time	Received By		Date/Time				
FINAL SAMPL DISPOSITION		Method	l (e.g., Return to	customer, per	lab procedure, used in pro	ocess)	Disposed By			Date/Time		

PNNEJE L B Dece Collector FLUOR M.R	1303	10			CHAIN O	F CUSTODY/	SAMPLE ANALYS	IS REQUEST		.o.c.# <b>S07-012-37</b> 2				
due	01.29	5.0	フ						-	Page <u>1</u> of <u>1</u>				
Collector FLUOR M.R	HANFORD . WEIL					ct/Requester Stewart		Telephone No. 509-376-5056	MSIN FAX					
SAF No. S07-012					Sampl	ing Origin			e Order/Charge Code					
roject Title					— Han	HMF-N	- 5/16 - Z	Ice Chest No.	Ice Chest No. SAWS-113 Temp.					
SURV. DECEM		ESPENSIONAL				od of Shipment		Bill of Lading/A						
<u>  Severn Trent Inc</u>   rotocol	ornorated. Ric	hland	es un la residente de la resid		Gov	rt. Vehicle	prity: 45 Days	Offsite Property	· No.					
SURV OSSIBLE SAME						PTI(	SPECIAL INSTRUCTIONS	Hold Time		ity Exemption: Yes V No				
eleasable per DOE O	der 5400.5 (199	0/1993	) T	T		per 49 CFR but are not	All Labs except WSCF: Batch all PNNI closure of 14 days. WSCF: Batch all PNNL GW samples s	abmitted into one SDG, daily		,				
Sample No.	Lab ID	*	Date	Time	No/Type Contai		Sample Analys		Preservative					
					1x20-mL P	Activity Scan			None					
B1LCX5		W	V	V	1x500-mL G/P	UTOT_KPA: Urar	nium (1)		HNO3 to pH <2					
							JLDV	8						
UOR HANFORD M.R. WEIL Relinquished By	Print	liè	Sign	DEC 11	Date/Time /	Received By Received By	Sign DEC	Date/Time/	S = SF = SO =	Sediment DL = Drum I				

SO = Solid
SI = Sludge
W = Water
O = Oil
A = Air WI = Wine
I. = Liquid
V = Vegetation
X = Other Relinquished By Date/Time Received By Date/Time Date/Time Date/Time Relinquished By Received By Disposed By Date/Time FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process)

DISPOSITION

PNNLUG L 130210
W05078
Due 01.25.0

C.O.C.#

u	2050	78			CHAIN O	F CUSTODY/	SAMPLE ANALYSI	IS REQUEST		S07-012-388			
	HANFORD	25	.07							Page <u>1</u> of <u>1</u>			
	R. WEIL					/Requester		Telephone No.	MSIN	FAX			
SAF No.	,			· · · · · · · · · · · · · · · · · · ·		tewart 12 Origin		509-376-5056 Purchase Order/	Charge Code				
S07-012 Project Title					Hanfo	ord Site							
SURV. DECEM	1BER 2006					HNE-H-	506-3	Ice Chest No. S	No. SAWS -115 Temp.				
Shinned To (Lab) Severn Trent In	action of the property of the	.1.1				of Shipment		Bill of Lading/Ai		-			
iseverii i reni in Protocol	comorated, Kid	niana	Sjonijarinisjanijajmounangenpajminjulasios)		GOVI.	Vehicle	No.						
SURV	NY 77					Pn	ority: 45 Days	Hold Time					
POSSIBLE SAM  ** ** Contains Ra releasable per DOE C	dioactive Materi	al at co	ncentrations that	are not regula	ated for transportation pe	r 49 CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PNNI closure of 14 days. WSCF: Batch all PNNL GW samples so	G, I, S, and W 07 SAF	Total Activity Exemption: Yes V No L S, and W 07 SAFs into one SDG, not to exceed SDC e.				
Sample No.	Lab ID	*	Date	Time	No/Type Contain	er	Sample Analys	is		Preservative			
B1LCY5		W	12/11/6	1129	1x20-mL P	Activity Scan			None				
B1LCY5		W		4	1x500-mL G/P	UTOT_KPA: Urar	nium (1)		HNO3 to pH <2				
		1											
		1					JLI	DIVH	· · · · · · · · · · · · · · · · · · ·				
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Religion HAN	FORD Print	:	Sign		Date/Time /5	Received By	Print Sign	Date/Time	1590 -	Matrix *			
M.R. WE		1211	Un	DEC 1	1 2006	Jr. Sm. U	. Som the DE	2 1 1 2006		, , , , , , , , ,			
Relinquished By				. V	Date/Time	Received By	<u> </u>	Date/Time		ediment DL = Drum Li			
1	nquisiicu by								SO = Se SL = SI				
Relinquished By					Date/Time	Received By		Date/Time	W = W	Vater I. = Liquid			
Remiquished Dy					Date/ I Hit	Received by		Date/1 ime	O = O A = A				
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Relinquished By					Date/Time	Received By		Date/Time					
										*			
FINAL SAMPI		Method	d (e.g., Return to	customer, per	r lab procedure, used in p	process)	Disposed By			Date/Time			

									*****			
PNNL Vle A	L/300	<del>)</del> 1 78	<i>?</i>		CHAIN OF	CUSTODY		C.O.C.#	S07-012	-404		
Due	01.25	07								Page	e <u>1</u> of	1
Collector	P. CON	INO	MILY		Contact/F Dot Ste			Telephone No. 509-376-5056	MSI	N J	FAX	
SAF No.			***************************************		Sampling	Origin	Village Value	Purchase Order	***************************************			
S07-012 Project Title					Hanfor	xOK'. HNF	Ice Chest No.	Temp.				
SURV. DECEM Shinned To (Lab)				W.W.L.L.		f Shipment	-10-20-9	Bill of Lading/A	<u> </u>			
Severn Trent Inc		hland			Govt. V							
Protocol SURV						Pri	iority: 45 Days	Offsite Property	No.			
POSSIBLE SAMF ** ** Contains Rac releasable per DOE On	dioactive Materia	al at con	ncentrations that	are not regulat	ed for transportation per 4	49 CFR but are not	closure of 14 days.	S Hold Time all PNNL samples submitted under A mples submitted into one SDG, daily	, G, I, S, and W 07	ivity Exemp SAFs into one	otion: Yes 🗹 e SDG, not to exc	No eed SDG
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample	Analysis		,	Preservative	
B1LD05		W	12/11/06	0915	1x20-mL P	Activity Scan			None		***************************************	
B1LD05		W	LV.	V	1x500-mL G/P	UTOT_KPA: Ura	nium (1)		HNO3 to pH <2	2		
											*******	····
		_					<b>サム</b> D	<u>v3</u>				
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Relinquished By	Print NOLLY	6	Sign	DE	Date/Time 15°	Received By	Print Sign	DEC 1 1 2006	507		Matrix *	
Relinquished By	2	/			Date/Time	Received By	S Omit	Date/Time	SE = SO = SL =	Soil Sediment Solid Sludge Water	DI. = 1 T = 7 WI = 7	Drum Solid Drum Liaui Fissue Wine Liauid
Relinquished By					Date/Time	Received By		Date/Time	0 =	Oil Air	V = '	Vegetation Other
Relinquished By					Date/Time	Received By		Date/Time				

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

PNNL 262130210
W05078
Dux 01.25.07

C.O.C.#

	W050	78	>		CHAIN OF	CUSTODY/	SAMPLE ANALYS	IS REQUEST			7-012	-396		
Dice	01.25	5.6	7							Page		1		
Collector	D.P.CO	NN	OLLY		Contact/R Dot Ste			<b>Telephone No.</b> 509-376-5056	MSIN	N FAX		.		
SAF No. S07-012					Sampling Hanford	Origin			Purchase Order/Charge Code					
Project Title SURV. DECEM	DED 2006						-N-506-4	Ice Chest No.	IF-I	Temp.				
Shinned To (Lab)		***************************************		We consider the second position of the second	Method o	f Shipment		Bill of Lading/Air	g/Air Bill No.					
Severn Trent Inc Protocol	cornorated. Ric	hland	and the second s		Govt. V	7,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Offsite Property	roperty No.						
SURV POSSIBLE SAMI ** ** Contains Ra releasable per DOE O	dioactive Materia	al at cor	ncentrations that	are not regulat	ed for transportation per 4		SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PNN closure of 14 days. WSCF: Batch all PNNL GW samples s	Total Activity Exemption: Yes No L  G, I, S, and W 07 SAFs into one SDG, not to exceed SDG losure.						
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analys	sis		Pr	eservative			
B1LD00		W	12/11/06	1014	1x20-mL P	Activity Scan			Vone		***************************************			
B1LD00		W	W	T.	1x500-mL G/P	UTOT_KPA: Uran	nium (1)		HNO3 to pH <2		······································			
							JLDV1				**************************************			
					90 1010									
				p, w	12/1/06	William VI								
			\								***************************************			
								N. HOCKWARE, CHILLIAN			***************************************			
	11.50	<u> </u>												
											***************************************			
Relinquished By D. P. CON	Print	6	Ze Sign	DE	Date/Time / S	Received By	LS. Sm. Sign	Date/Time/S	<del>-111</del>	Matri		Drum Solid		
Relinquished By	Elinquished By					Received By		Date/Time	SO = SI. =	Sediment Solid Sludge Water	T = WI = I, =	Drum Liqui Tissue Wine Liquid		
Relinquished By	Relinquished By					Received By		Date/Time	0 =	Oil Air		Vegetation Other		
Relinquished By					Date/Time	Received By		Date/Time		tuhn				
FINAL SAMPI DISPOSITION		Method	l (e.g., Return to	customer, per	lab procedure, used in pro	ocess)	Disposed By	***************************************		Date/Time	:			

PNNL He	L/302 W050 W01-20	10			CHAI	N OF (	CUSTODY/	SAMPLE ANAL	YSIS R	EQUEST.		C.O.C.#	807-012-276			
(Collector	D.P.CC	5.0	$\frac{97}{10000}$			Contact/Re	an octor			Tr. J		Page				
	U. T. V	NEWS W	ULL!			Dot Stew				Telephone No. 509-376-5056						
SAF No. S07-012						Sampling Origin Hanford Site					Purchase Order/Charge Code					
Project Title SURV. DECE	EMBER 2006					logbook'. HNF-N-506-4				Ice Chest No	TF-(	Temp.				
Shinned To (La	h)	***************************************				Method of Shipment				Bill of Lading/A	ir Bill No.					
Protocol SURV	Incornorated, Ric	hland		and to specify the property of the specific of		Govt. Vehicle  Priority: 45 Days  Offsite Pr					No.					
** ** Contains	MPLE HAZARI Radioactive Materia Order 5400.5 (199	at co	ncentrations that	are not regulate	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch a closure of 14 days. WSCF: Batch all PNNL GW sar	ll PNNL sample		, G, I, S, and W	Activity Exemt 07 SAFs into one	otion: Yes V No Specific No Sp			
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample .		711100000000000000000000000000000000000	Preservative					
B1LCF3		W	12/11/04	1351	1x20-mL	. P	Activity Scan				None					
B1LCF3		W	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1/2	1x500-m	ıL G/P	UTOT_KPA: Uran	ium (1)			HNO3 to pH	l <2				
				-												
								JLDVW								
•							- Maddaha		***************************************							
		$ \leftarrow $		1200	0											
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Relinquished By	Print	T	Sign	DEC	Date/	Time /> C	Received By	Print Sign	DEC 1	Date/Time • 1 2006	1590		Matrix *			
Relinquished By		f		<u> </u>	Date/		Received By	· Junior		Date/Time	S SE SO SL	= Soil = Sediment = Solid = Sludge	DS = Drim Sol DI = Drim Lia T = Tissue WI = Wine			
Relinquished By					Date/	Time	Received By			Date/Time	W O A	= Water = Oil = Air	I. = Liquid V = Vegetatio X = Other			

FINAL SAMPLE DISPOSITION

Relinquished By

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Date/Time

Received By

Disposed By

Date/Time

PNNEUGL130210
_ 6005078
WO 5078 Due 01:25:07

C.O.C.#

007 012 202

M	2050	78	?		CHAII	N OF	CUSTODY	/SAMPL	E ANAL	YSIS R	<b>EQUEST</b>	•		30	-012	-292
) w	2050 2013	5.0	27										Р	age <u>1</u>	of	1
Callactor	P. CON				•	Contact/Re			· ·		Telephone No. 509-376-5056	М	SIN	FAX		
SAF No \S07-012					5	Sampling ( Hanford	Origin				Purchase Order/Charge Code					
Project Title SURV, DECEMI	3ER 2006		·····				bok, Hni	=- N-5	06-4		Ice Chest No. Temp.					
Shinned To (Lab)						Method ^l of	Shipment				Bill of Lading/A	r Bill No.				
Severn Trent Inco Protocol SURV	ornorated Ric	<u>hland</u>		rados municipales de des de sendo franches (considerán).		Govt. Vehicle  Priority: 45 Days  Of					Offsite Property No.					
POSSIBLE SAMP	ioactive Materia	l at cor	ncentrations that	are not regulat	ed for transpor	rtation per 49	per 49 CFR but are not  SPECIAL INSTRUCTIONS Hold Time  All Labs except WSCF: Batch all PNNL samples submitted under A, Colosure of 14 days.  WSCF: Batch all PNNL GW samples submitted into one SDG, daily colored to the samples submitted into one SDG.									
Sample No.	Lab ID	*	Date	Time	No/Type	Container			Sample A	Analysis				Pre	servative	
B1LCJ0		W	ia/11/06	1300	1x20-mL	Р	Activity Scan					None				
B1LCJ0	1LCJ0 W 1 1x50						UTOT_KPA: Ura	nium (1)				HNO3 to pH	<2			
									JLI	DYP_						
									*******							
							<u> </u>			***************************************						·
	<u> </u>															
					100					·····						
	$\longrightarrow$		4	2, W		No										
			- A		<del>  19 1/</del>	00			······································					,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		
-		<u> </u>														
	<u> </u>	<del>                                     </del>														·
	<b></b>	<del> </del>														
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L.,		1	<u> </u>	L	<b>%</b>		- ₁					)			· · · · · · · · · · · · · · · · · · ·	
Relinquished By  D. P. CON	Print NOLL:	4	Sign	DE		_{ime /5} 0 006	Received By	// Sprint	Sign	DEC	Date/Time			Matrix		
						ime	Received By	<del>1</del> 3.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	WITCH WATER AND THE STREET	Date/Time		= Sludge	nt	DI. = T = WI =	Drum Solid Drum Liqui Tissue Wine Liquid
Relinquished By D.						ime	Received By $Date/Time \qquad                                   $					V =	Vegetation Other			
Relinquished By Da						ime	Received By	24.000 Am.		NE STOLEN	Date/Time					
FINAL SAMPLI DISPOSITION		Method	(e.g., Return to	customer, per	lab procedure,	used in proc	ess)		Disposed By				D	ate/Time		



404,

Date/Ti:	me Received: 12.	11-06 1500		
Client:_	16w	SDG#: W050	78 NA[] SAF#:	507-012 NA[]
Work C	Order Number: <u>U6</u>	L/302/0 CI	hain of Custody # <u>50</u>	7-012-292,276,396 388,380,372
Shippin	ng Container ID:	<i>E-1</i> Ai	ir Bill # <u>\ \                               </u>	
1.	Custody Seals on s	shipping container intact?	NA	[] Yes [/ No []
2.	Custody Seals date	ed and signed?	NA	[] Yes [] No []
3.	Chain of Custody	record present?		Yes [ No [ ]
4.	Cooler températur	e:NAJ/ 5.Ver	rmiculite/packing mater	rials is NA // Wet[] Dry[]
6.		s in shipping container:		
7.	Sample holding tir		*	Yes [] No []
8.	Samples have:tapecustody seal	S	hazard lal appropria	bels te samples labels
9.	Samples are:in good conbroken	dition	leaking have air b Only for sampl	oubbles les requiring head space)
10.	Sample pH taken?	NA[] pH<2/	↑ pH>2[] pH>9	[]
11.		Sample Collector Listed? * on only. No corrective action	n needed.	Yes [/ No[]
12.	Were any anomali	es identified in sample recei	pt?	Yes[] No 🏿
13.	Description of and	omalies (include sample num	bers): <i>N A</i>	
	<i>f</i> *	n.		
Sample	Custodian:	. Smilh	Date:	1.06 1500
Cli	ent Sample ID	Analysis Requested	Condition	Comments/Action
Client Ir	nformed on	by	Person contacted	
[ ] No	action necessary; pro	cess as is.		
Project i	Manager		Date	
LS-023.	, 9/03, Rev. 5			

PNNLJ61140107 W05078
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C.O.C.#

\$07-012-412

1.	0507	18			CHAI	NOF	CUSTODY	SAMPLE ANA	ALYSIS F	<b>EQUEST</b>		,	30/-012	,-412		
Dru	01.26	0	7									Page	<u>1</u> of	1		
Collector Flu	ior Hanford					Contact/Re				<b>Telephone No.</b> 509-376-5056	MSI	N F	FAX			
SAF No. S07-012		si VIV				Sampling (	<b>Drigin</b>			Purchase Order/C	Charge Code					
Project Title	2006					Hanford	E W-50	16-5 1		Ice Chest No. 5	<	Temp.				
SURV, DECEME Shinned To (Lab)	3ER 2006		·····			Method of				Bill of Lading/Air						
Severn Trent Inco	ornorated. Ric	hland				Govt. Ve										
Protocol SURV						Priority: 45 Days  Offsite Property No.										
POSSIBLE SAMPI  ** ** Contains Radi releasable per DOE Ord	ioactive Materia	ıl at cor	ncentrations that	are not regulat	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTI All Labs except WSCF: Ba closure of 14 days. WSCF: Batch all PNNL G	atch all PNNL sampl		G, I, S, and W 07	nivity Exempt SAFs into one	tion: Yes 🗹 SDG, not to ex	No ceed SDG		
Sample No.	Lab ID	*	Date	Time	No/Type	Container		San	nple Analysis				Preservative	e		
B1LD10		W	کاف ور وا	1317	1x20-mL		Activity Scan			1	Vone	•				
B1LD10						mL P	9310_ALPHABE	TA_GPC: Alpha + Beta (	2)		HNO3 to pH <2					
B1LD10	W 1x50					L G/P	UTOT_KPA: Uranium (1) HNO3 to pl						) pH <2			
N																
									TLFPQ	)						
									9844							
		<u> </u>						**************************************								
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							115-31	WINNEY CONTRACTOR OF THE PROPERTY OF THE PROPE								
		<u> </u>					100							***		
								9717-06					***************************************			
			<u> </u>			. <u>+41</u>	<u> </u>				(787)					
Relinquished By Fluor Hanfo	Print ord k		Sign	1	Date/	, -	Received By	-/ Print C	Sign	Date/Time/	709	М	latrix *			
O B BREW Relinquished By	ord MNGTON ()				DEC 1 Date/	100	Received By	A 3-8m. Ch		DEC 1 2 20 Date/Time	SE = SO = SL =	Soil Sediment Solid Sludge Water	DI. = T = WI =	Drum Solid Drum Liqui Tissue Wipe Liquid		
Relinquished By					Date/	Гіте	Received By			Date/Time	O =	Oil Air	V =	Vegetation Other		
Relinquished By	-	III			Date/	Γime	Received By	MM41		Date/Time						
FINAL SAMPLE DISPOSITION		Method	(e.g., Return to	customer, per	lab procedure	, used in proce	ess)	Dispose	ed By			Date/I	.`ime	4		

										***************************************			
PNNLV62  Due C	1401	017 78			CHAI	N OF	CUSTODY/S	SAMPLE ANAL	YSIS R	EQUEST	1	C.O.C. #	S07-012-428
Duec	01.26 0	07										Pa	age <u>1</u> of <u>1</u>
	or Hanford R. BREWINGT					Contact/Re Dot Stew	t/Requester Telephone No. Stewart 509-376-5050				MSIN FAX		
SAF No. S07-012						Sampling C	)rigin		I	Purchase Order	Charge Coo	de	
Project Title	DED Asse					Hanford	5-N-506	/	I	ce Chest No.	•	Temp	*
SURV. DECEM Shinned To (Lab)		dyktiobininterening.				Method of				Bill of Lading/Ai			
Severn Trent Inc Protocol	cornorated. Ric	hland	2500000 MONTH (000 powers) and process (000 po	modeles hara in la modele a de a modeles de companya d		Govt. Ve				Offsite Property			
SURV						<u> </u>		r <b>ity:</b> 45 Days					
POSSIBLE SAMP ** ** Contains Rac releasable per DOE Or	dioactive Materia	l at co	ncentrations that	are not regulat	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch al closure of 14 days. WSCF: Batch all PNNL GW san	ll PNNL samples	submitted under A,	G, I, S, and V	I Activity Exe	mption: Yes 🗹 No Lone SDG, not to exceed SDG
Sample No.	Lab ID	*	Date	Time	<u> </u>	Container		Sample A	Analysis	***************************************			Preservative
B1LD20		+	12.12-06	1155	1x20-mL	-	Activity Scan			***************************************	None		
B1LD20		W	acressor outsides.		1x500-m	nL G/P	UTOT_KPA: Urani	um (1)	****	****	HNO3 to p	H <2	
	<u> </u>							***************************************	- IIII				
		Ŀ							477				
								JLF	PP_				***************************************
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								<u> </u>	***************************************	***************************************		····	
		<del>                                     </del>					12-12-00						
		J	$\overline{\mathcal{L}}$		<u> </u>		0		<del>, , , , , , , , , , , , , , , , , , , </del>	······	. \		
Relinguished Briord D. R. BREWIN		2 /	Sign	1	Date/ DEC	Time 14 00 2 2006	Received By .	Print Sign	4	Date/Time DEC 1 2	1400 -	<i>c</i> ~	Matrix *
Relinquished By	<u> V1</u>	<u>~/"</u>			Date/	Time	Received By	or O- OMIT		Date/Time	SF SC SI	= Solid = Sludge	T = Tissne WI = Wine
Relinquished By					Date/	Time	Received By			Date/Time	W O A	= Water = Oil = Air	I. = Liquid V = Vegetatio X = Other

FINAL SAMPLE DISPOSITION

Relinquished By

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Date/Time

Received By

Disposed By

Date/Time

PNNLJC	W050	7	,		~~							C.O.C. #	CO7 012 420	
	W050	78		+	CHAIN	OF (	CUSTODY/	SAMPLE AN	ALYSIS I	REQUEST	ı		S07-012-420	_
	Due o	1/-2	607									Pag	ge <u>1</u> of <u>1</u>	
	Fluor Hanford	TAN			C	Contact/Re				Telephone No. 509-376-5056	MS	IN	FAX	
SAF No.	700 x 10 18 18 18 18 18 18 18 18 18 18 18 18 18	11 W1V			s	ampling (	)rigin		***************************************	Purchase Order/	Charge Code			$\dashv$
S07-012 Project Title			*******			Hanford				Ice Chest No.		Temp.		$\dashv$
	EMBER 2006						- N-50	<u> </u>	***************************************	Ice Chest No 5		i emp.		_
Severn Trent	ah) t Incornorated. Ric	hland			N	1ethod of 3 Govt. Ve	Shipment hicle			Bill of Lading/Ai	r Bill No.			
Protocol SURV							Pric	ority: 45 Days		Offsite Property	No.		***************************************	7
POSSIBLE SA  ** ** Contains	MPLE HAZARI s Radioactive Materi E Order 5400.5 (199	al at con	ncentrations that	are not regulat	ed for transport	tation per 49	CFR but are not	SPECIAL INSTRUCT All Labs except WSCF: E closure of 14 days. WSCF: Batch all PNNL (	Batch all PNNL samp		G, I, S, and W 07		nption: Yes  No No ne SDG, not to exceed SDG	G
Sample No	o. Lab ID	*	Date	Time	No/Type C	Container		J Sa	mple Analysis	Art of Mannes		-	Preservative	
B1LD15		W	Q-12-06	1108	1x20-mL		Activity Scan				None	]		
B1LD15		W	1		1x500-mL	G/P	UTOT_KPA: Urar	ium (1)			HNO3 to pH <	<del></del>		
34								***		/			***************************************	
								1	TLFPN	/			***************************************	
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		<b>-</b>					<b>\</b>	\						
X		<u> </u>						<b>-</b> M						
		—						<i></i>						
		-						12	12 26					
		<u> </u>							***************************************					
Relimpished By D. R. BRE	ford Print	Z BY	Sign W7		DE Date/Ti	7 200	Received By	Print S-Sm. 4	Sign	Date/Time /	กกกก	= Soil	Matrix *  DS = Dnim S	Solid
Relinquished By			D		· Date/Tir		Received By			Date/Time	SE SO SL W	= Sediment = Solid = Sludge = Water	DI. = Drum I: T = Tissue WI = Wine I. = Liquid	iani
Relinquished By	,				Date/Tir	me	Received By			Date/Time		= Oil = Air	V = Vegetati X = Other	ion
Relinquished By				, -11 atticle - 11 ton	Date/Tir	ne	Received By		Water and the second se	Date/Time				
FINAL SAM DISPOSITI		Method	l (e.g., Return to	customer, per l	lab procedure, t	used in proce	ess)	Dispos	sed By			Date	e/Time	

# ATTE STL

	Time Received: 13-13-06 14100	
Clien	: P6W SDG#:005	778 NA[] SAF#: 507-0/2 NA[]
	Order Number: Ole L 140107	
	ing Container ID: ROSS	Air Bill # N/A
1.	Custody Seals on shipping container intact?	NA[] Yes[] No[]
2.	Custody Seals dated and signed?	NA[] Yes () No[]
3.	Chain of Custody record present?	Yes [/ No[]
4.	Cooler température: NA [] 5.	Vermiculite/packing materials is NA [ Wet [] Dry []
6.	Number of samples in shipping container:_	
7.	Sample holding times exceeded?	NA[] Yes[] No[]
8.	Samples have:	
	tape custody seals	hazard labelsappropriate samples labels
9.	Samples are:	leaking have air bubbles (Only for samples requiring head space)
10.	Sample pH taken? NA[] pH<	2/[] pH>2[] pH>9[]
11.	Sample Location, Sample Collector Listed? *For documentation only. No corrective act	* Yes No []
12.	Were any anomalies identified in sample rec	ceipt? Yes [] No.()
13.	Description of anomalies (include sample no	umbers): A)/A
***************************************	4	
Sample	Custodian: A. Smith	Date: 12-12-06 1400
CI	ient Sample ID Analysis Requested	Condition Comments/Action
**************************************		
Client L	nformed onby	Person contacted
( ) No	action necessary; process as is.	
Project	Manager	Date
15 023	0/03 Day 5	

	14011	0							· · · · · · · · · · · · · · · · · · ·				C.O.C.#		
PNNL V6 L	0507	8			(	CHAI	N OF (	CUSTODY	/SAMPLI	E ANALYSI	IS REQUEST	. [		S07-010-	-297
K	hee 01	26	· 07										Page	<u>1</u> of	1
CONCELLY DESCRIPTION	fanford REWINGT						Contact/Re				<b>Telephone No.</b> 509-376-5056	MSIN FAX			
SAF No.	ME VIII VOI						Sampling O	z Origin Purchase Order							
S07-010 Project Title			····				Hanford S		· 1		Ice Chest No		Temp.		
SURV. OCTOBER Shinned To (Lab)	2006						<u> H ル ト</u> Method of S	5-N-50.			ドル Bill of Lading/A				
Severn Trent Incorn	orated, Rich	land					Govt. Vel								
Protocol SURV								Pri	i <b>ority</b> : 45 Days	• • • • • • • • • • • • • • • • • • • •	Offsite Property	No.			
POSSIBLE SAMPLE  ** ** Contains Radioac releasable per DOE Order	ctive Material	at cond		are not	regulate	ed for transpo	rtation per 49	CFR but are not	All Labs excep SDG closure of		Hold Time CGW samples submitted und ewart, PNNL			ion: Yes 🗹 one SDG, not to	
Sample No.	Lab ID	*	Date	Tir	me	No/Type	Container			Sample Analys	is		and the same of th	Preservative	•
B1KPP2		W	12.13-06	093	28	1x1000-n	nL P	906.0_H3_LSC:	Tritium (1)			None			
B1KPP2		W	(C.234900)			1x20-mL	Р	Activity Scan			-	None			
B1KPP2		W				1x1000-n	nL P	9310_ALPHABE	TA_GPC: Gros	s Alpha (1)		HNO3 to pH <2			
					-		4.9.mm.								
										TLFPQ					
		-													
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					V						1, 10 mm m m m m m				*****
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			:												
								L					**************************************		
Relinquished By Fluor Hamord D. R. BREWINGT	ON ( )/2	B	Sign			Date/1	ime 1400 2006	Received By J.	A Serint	m Th	Date/Time	000	M	atrix *	Drum Solid
Relinquished By	****	<del>/</del>	0	٠.	*	Date/I		Received By			Date/Time	SE = SO = SL = W =	Sediment Solid Sludge Water	DI. = T = WI = I. =	Drum Liaui Tissue Wine Liauid
Relinquished By						Date/T	ime	Received By			Date/Time		Oil Air		Vegetation Other
Relinquished By						Date/T	îme	Received By			Date/Time				
FINAL SAMPLE DISPOSITION	Disposal M	ethod	(e.g., Return to	custom	er, per l	ab procedure	, used in proce	ess)		Disposed By			Date/I	ime	



Date/	Time Received: 13 -	12-06 14:00			
Clien	11 Pow	SDG#: <u>ωο</u>	5078 NA[]	SAF#:_8	707-010 NA()
Work	Order Number: U6	L140110			
Shipp	oing Container ID:	2055	Air Bill # <u>N</u>		The second secon
1.	Custody Seals on s	hipping container intac	t?	NA[]	Yes [ No[]
2.	Custody Seals date	d and signed?			Yes [/] No []
3.	Chain of Custody 1	ecord present?		Į0	Yes [/ No []
4.	Cooler température	NA V	5.Vermiculite/pack	ing material	s is NA [/ Wet[] Dry
6.		s in shipping container:			•
7.	Sample holding tin	nes exceeded?		NA [/	Yes[] No[]
8.	Samples have:tapecustody seals	) <u></u>		nazard labels	
9.	Samples are:in good condbroken	ition	l h (Only f	iave air bubl	oles requiring head space)
10.	Sample pH taken?	NA[] pH	<2 // pH>2 //	pH>9[]	
		ample Collector Listed nonly. No corrective a			Yes / No[]
12.	Were any anomalie	s identified in sample r	eceipt?		Yes[] Not]
13.	Description of anor	nalies (include sample:	numbers):	10	
***************************************	f.			and a second	
Sample	e Custodian: <u>A    </u>	Smith	Date:	2.12.00	6 14:00
CI	ient Sample ID	Analysis Requested	Conditie	on	Comments/Action
***************************************				الله المحادثة المحاد	
Client I	nformed on	ьу	Person c	ontacted	
[ ] No	action necessary; proce	ess as is.		į	
Project	Manager		Date		
LS-023	, 9/03, Rev. 5				

													***************************************		
PNNLJ&L U Du Collector	14013	51 8			CHAIN C	OF (	CUSTODY/S	SAMPLE ANAI	LYSIS REQUE	ST	C.O.C. #	W07-011-	-426		
<u>alle</u>	ce 0/	'√( Han	07					-				e <u>1</u> of	1		
Collector	R. T.	SICK	LE			act/Red	guester art		Telephone N 509-376-5		MSIN FAX				
SAF No.					Samp	oling O	rigin			Purchase Order/Charge Code					
W07-011 Project Title					1	inford S	Site		Ice Chest No		Temp.	············			
RCRA, NOVEM	BER 2006			**************************************		9 bo	OR HUF-	N-506-4	Ice Chest No						
Shinned To (Lab) Severn Trent Inco	ornorated. Ric	hland			concernment mistricitation sind (not set for a con-	od of S ovt. Vel	Shipment nicle		Bill of Ladir	g/Air Bill No	•				
Protocol RCRA							Prio	rity: 45 Days	Offsite Prop	erty No.					
POSSIBLE SAMP  ** ** Contains Rad releasable per DOE Ore	lioactive Materia	l at cor	ncentrations that	are not regulate	ed for transportation	n per 49 (	CFR but are not	closure of 14 days.	NS Hold Time all PNNL samples submitted une samples submitted into one SDG,	ler A, G, I, S, an	otal Activity Exem d W 07 SAFs into o	notion: Yes 🗹 ne SDG, not to exce	No beed SDG		
Sample No.	Lab ID	*	Date	Time	No/Type Conta	ainer		Sample	e Analysis			Preservative			
B1L646		W	12/12/06	1219	1x20-mL P		Activity Scan			None	· · · · · · · · · · · · · · · · · · ·				
B1L646		W		1	1x500-mL P		TC99_ETVDSK_L	SC: Tc-99 (1)		HCl to p	H <2				
B1L646		W			1x4000-mL G	S/P	GAMMALL_GS: Li	st-1 (9)		HNO3 to	pH <2				
B1L646		W		,	1x1000-mL P	·	906.0_H3_LSC: Tr	itium (1)		None			*****		
B1L646		W	V	ķ	1x1000-mL P	)	9310_ALPHABETA	A_GPC: Alpha + Beta (2)		HNO3 to	pH <2				
			•												
									JLFQP						
								a Principal de la Carte de							
								***************************************	· · · · · · · · · · · · · · · · · · ·						
					12/12/06								····		
				(A)	2106	0							w		
				K.	12/12/04										
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	L						<del></del>								
Relinquished By Fluor R. T.	Hanford Print-	2		DEC	Date/Tipe 5		Received By	Print Sig	DEC 1 2 200		S = Soil	Matrix *	Drum Solid		
Relinquished By		C		***************************************	Date/Time		Received By		Date/T	me	SE = Sediment SO = Solid SL = Sludge	DI. = 1 T = 1	Drum Liqui Tissue Wine		
Relinquished By					Date/Time		Received By		Date/T	me	W = Water O = Oil A = Air	V = '	Liquid Vegetation Other		
Relinquished By					Date/Time		Received By		Date/T	me					

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By



Date/	Time Received: 12.1	2.06 1500	Ò		
Clien	n: Pbw	SDG #: <u>W</u>	05078 NA	() SAF#: 4	207-011 NACE
	Order Number: U64				7-011-426
	oing Container ID: J	•		NIA	- Eliminate description of the second deposition of the second of the second deposition of a second
1.	Custody Seals on ship	ping container inta			Yes [ No[]
2.	Custody Seals dated a	nd signed?			Yes [/ No []
3.	Chain of Custody reco	ord present?			Yes [] No []
4.	Cooler température:	NA (/	5.Vermiculite/p	packing material	s is NA ( Wet [ ] Dry [
6.	Number of samples in	shipping container			- with Metti Dist
7.	Sample holding times			,	Yes[] No[]
8.	Samples have:				x 00 ( ) 340 ( )
	tape custody seals			hazard labels appropriate s	Samaralas tabala
9.	Samples are:in good conditiobroken	n .		leaking have air bubl	
10.	Sample pH taken?	NA[] pF		// pH>9[]	, ,
	Sample Location, Sam *For documentation or	ple Collector Lister	d? *		Yes [] No []
12.	Were any anomalies id		,	,	Yes ( ] No N
13.	Description of anomali	es (include sample	numbers):	NID	
				with a factor and a second	
	Custodian:	Smith	Date:	12.12.0	6 1500
Cli	ent Sample ID A	nalysis Requested	Con	dition	Comments/Action
Client L	nformed on	by	Pers	on contacted	,
	action necessary; process a		- 1	A Section of the sect	
	Manager		Date		
	9/03 Rev 5			The second secon	makki e di e manganing i ing bali gala garangan yang manan pulan magan ye. Puma manan a ting da gini di sudawanye ra ga

PNNL	J6L140156
	WØS078

### CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#

I07-010-104

<u>1</u> of Fluor Hanford Collector Contact/Requester Telephone No. MSIN FAX R. T. SICKLE Dot Stewart 509-376-5056 SAF No. Sampling Origin Purchase Order/Charge Code 107-010 Hanford Site Ice Chest No. Project Title 10abook: HNF-N-506-4 Temp. 2ZP1-LOI, NOVEMBER 2006 Shinned To (Lab) Method^lof Shipment Bill of Lading/Air Bill No. Severn Trent Incorporated, Richland Govt. Vehicle Protocol Offsite Property No. Priority: 45 Days CERCLA POSSIBLE SAMPLE HAZARDS/REMARKS SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes V No ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not All Labs except WSCF: Batch all PNNL samples submitted under A. G. I. S. and W 07 SAFs into one SDG, not to exceed SDG releasable per DOE Order 5400.5 (1990/1993) closure of 14 days. WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure. Sample No. Lab ID Date Time No/Type Container Sample Analysis Preservative B1L2C8 W 12/12/06 314 1x20-mL P Activity Scan None B1L2C8 W 1129LL SEP LEPS GS LL: I-129 (1) None 2x4000-mL G/P B1L2C8 W 1x500-mL P TC99 ETVDSK LSC: Tc-99 (1) HCl to pH <2 B1L2C8 W SRISO SEP PRECIP GPC: Sr-90 (1) HNO3 to pH <2 3x1000-mL G/P JLF34 1<u>. Wal</u> DEC 1 2 2006 Date/Time/Received By Relinquished By Hanford Matrix * R. T. SICKLE = Soil DS = Drum Solid SE = Sediment DL = Drum Liqui Relinquished By Date/Time Received By Date/Time == Solid SO = Tissue SL = Sludge = Wine = Water = Lianid Date/Time Received By Date/Time 0 == Oil = Vegetation Relinquished By = Air = Other Received By Relinquished By Date/Time Date/Time Disposal Method (e.g., Return to customer, per lab procedure, used in process) Date/Time FINAL SAMPLE Disposed By DISPOSITION

PNNLV le	L1401.	5 Q 78		(	СНАІ	N OF	CUSTODY/S	SAMPLE ANAI	LYSIS R	EQUES 1	-	C.O.C.#	I07-010-	-42
Collector		CONTROL .	···	· · · · · · · · · · · · · · · · · · ·		Contact/Re			1	Telephone No.			1 of 1 AX	
SAF No.	P. T. SK	CKLE				Dot Stew Sampling (				509-376-5056 Purchase Order				
I07-010						Hanford				r urenase Order	/Charge Coue			
Project Title 2ZP1-LOL NO	VEMBER 2006					Logh	nk' HNF-	N-506-4		Ice Chest No.	TE-1	Temp.		
Shinned To (Lab)			TO VALUE OF THE PROPERTY OF TH			Method of			1	Bill of Lading/A	ir Bill No.			
Severn Trent In	cornorated Ric	hland				Govt. Ve	hicle			0.00.11.70	N.T	<del></del>		
Protocol CERCLA							Prio	rity: 45 Days		Offsite Property	No.			
POSSIBLE SAM  ** ** Contains Ra releasable per DOE C	adioactive Materia	al at co	ncentrations that	are not regulate	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTION All Labs except WSCF: Batch closure of 14 days. WSCF: Batch all PNNL GW s	all PNNL sample	s submitted under A	, G, I, S, and W	Activity Exempt 07 SAFs into one	tion: Yes 🗹 N SDG, not to exceed	Io L
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample	e Analysis				Preservative	
B1L279		w	12/12/06	1009	1x20-mL	. P	Activity Scan		······································		None	L		
B1L279		<del>l w</del>	12/12/04	100 .	2x4000-i			S GS LL: I-129 (1)	······································		None			
B1L279		+			1x500-m		TC99_ETVDSK_L				HCl to pH <2	2		
B1L279		<del>l</del> w	+		3x1000-			CIP_GPC: Sr-90 (1)			HNO3 to pH			
		<del>                                     </del>		<b>-</b>							·			
		1						T	ZF3X					
				1 00	)									
			0.	wall										
		$\overline{\mathbf{X}}$		VI Cı	210VP									
				19-1										
,,,,		1												
**************************************		<u> </u>												
		1												
		+	-											
					h.		<u> </u>				1			
Relinquished By				ne	4Th	Time To	Received By	Print Sign	L DEC	Date/Tine	500	M	Iatrix *	
Relinquished By	unit /	C	LE!		Date/	2006 Time	Received By	m - On N	th bee	Date/Time	S SE SO SL	= Soil = Sediment = Solid = Sludge	DS = Dm DI = Dm T = Tis WI = Wi	um Liaui ssue
Relinquished By					Date/	Time	Received By			Date/Time	W O A	= Water = Oil = Air	I. = Lio	nnid getation

FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process)
DISPOSITION

Date/Time

Received By

Relinquished By

Disposed By

Date/Time



	Time Received: 12-12-06	A Section Assessment Control of the		
Clier	ni: <del>Pbw</del> sdc	6#: WO5078 NA[]	SAF # 107-010 NA	<u> </u>
Wor}	k Order Number: <u>U6 4 1401</u>	56 Chain of Custo	dy # 107-010-42, 12	
	ping Container ID: JF-1		NIA	
1.	Custody Seals on shipping cont		NA[] Yes   No[]	
2.	Custody Seals dated and signed	?	NA[] Yes[] No[]	
3.	Chain of Custody record presen	ι?	Yes [ No [ ]	
4.	Cooler température:N	NA // 5. Vermiculite/pack	ing materials is NAM Wet[][	Dru [ !
6.	Number of samples in shipping			21 9 [ ]
7.	Sample holding times exceeded	?	NA [ Yes [ ] No [ ]	
8.	Samples have:tapecustody seals		nazard labels  Appropriate samples labels	
9.	Samples are:in good conditionbroken	tı h		.)
10.	Sample pH taken? NA	[] pH<2 // pH>2 //		
11.	Sample Location, Sample Collect *For documentation only. No co	ctor Listed? * Orrective action needed.	Yes / No[]	
12.	Were any anomalies identified in		Yes[] NoX	
13.	Description of anomalies (includ	e sample numbers): W//	9-	The special section is
Sample	e Custodian: S. Smit	h Date: /	2.12.06 1500	
Cl	ient Sample ID Analysis Re		The state of the s	n
***************************************				terit energy and a second
Client L	nformed onby	Person co	ontacted	
	action necessary; process as is.			
roject l	Manager	Date		**********
S-023	9/03 Rev 5			

PNNIJG I	1401 2057 Du JOR HÁNFOI	61	21 07	(	CHAIN C	OF CUSTOD	Y/SAMPLE ANA	ALYSIS R	EQUEST		C.O.C. #	107-006-130		
Collector FL	JOR HANFOR	RD	26 01		Conta	act/Requester			Felephone No.	MSI	1	<u>1</u> 01 <u>1</u>		
	M.R. WEIL				Do	ot Stewart	<u> </u>		509-376-5056					
SAF No. 107-006						pling Origin anford Site			Purchase Order/	r/Charge Code				
Project Title			***************************************		1 14	HNF-N-	506 3	b	ce Chest No.		Temp.			
100HR3IAM(1/ Shinned To (Lab)		EMBE	R 2006		37.4	nod of Shipment	300 )		<u> </u>	W5/13	· · · · · · · · · · · · · · · · · · ·			
Severn Trent In		chland				ovt. Vehicle			Bill of Lading/Air	r Bill No.				
Protocol CERCLA							Priority: 45 Days		Offsite Property	No.	***************************************			
POSSIBLE SAMI	dioactive Materi	al at cor	ncentrations that	are not regulate	ed for transportation	n per 49 CFR but are not	SPECIAL INSTRUCTI All Labs except WSCF: Ba closure of 14 days. WSCF: Batch all PNNL G	itch all PNNL samples	s submitted under A,	G, I, S, and W 07	tivity Exempt SAFs into one	tion: Yes V No SDG, not to exceed SDG		
Sample No.	Lab ID	*	Date	Time	No/Type Conta	ainer	San	nple Analysis		***************************************		Preservative		
B1KYJ3		l w	12-12-124	1032	1x20-mL P	Activity Scan		1	li i	None	<u> </u>			
B1KYJ3		w	1		3x1000-mL G		PRECIP_GPC: Sr-90 (1)			HNO3 to pH <	2			
B1KYJ3		<del>l</del> w	*		1x1000-mL P					None				
		1		<b>**</b>	*** * * * * * * * * * * * * * * * * * *									
	<u> </u>	+						TLF42						
	<u> </u>	1						LFTO						
		+	·		<del> </del>						****			
		+-									·	<del> </del>		
	<del> </del>	†												
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		+												
		1									***************************************			
		+-												
		╂	12					<u></u>						
		1										77 ***********************************		
Relinquished By FLUOR HANF( M.R. WEIL Relinquished By	ORD Print		Sign	DE		Received By Received By	th Print Smill	Sign	Date/Time DEC 1 2 2	S = SE = SO =	Soil Sediment	DS = Drum Solid DI = Drum Liou T = Tissue		
Relinquished By					Date/Time	Received By		and the same of th	Date/Time	W =	Sludge Water Oil Air	WI = Wine I. = Liquid V = Vegetation X = Other		
Relinquished By					Date/Time	Received By			Date/Time	<u> </u>		-		
FINAL SAMPL DISPOSITION		Method	(e.g., Return to	customer, per l	ab procedure, used i	in process)	Dispose	d By		-	Date/T	ime		



	ime Received: 12.12.06 /		
Client:	P6W SDG#: 6	W05078 NA[] SA	AF#: 107-006 NA
			# _Z07-006-130
Shippi	ng Container ID: SAWSIIS	Air Bill# <u>W /</u>	10
1.	Custody Seals on shipping container i		NA[] Yes [/ No[]
2.	Custody Seals dated and signed?		NA[] Yes [ No[]
3.	Chain of Custody record present?		Yes [ No [ ]
4.	Cooler temperature: NA ()	5. Vermiculite/packing a	materials is NA Pl West 1 Days
6.	Number of samples in shipping contai		
7.	Sample holding times exceeded?		NA [ Yes [ ] No [ ]
8.	Samples have:tapecustody seals	hazaı	ard labels
9.	Samples are:in good conditionbroken	leakin have (Only for sa	e air bubbles samples requiring head space)
10.	Sample pH taken? NA[]	pH<2//pH>2// pH	pH>9[]
11.	Sample Location, Sample Collector Lit *For documentation only. No correction	sted? * ve action needed,	Yes [ No [ ]
12.	Were any anomalies identified in samp	le receipt?	Yes [] No 🛭
13.	Description of anomalies (include samp	ple numbers): W/K	
	0 0		
Sample (	Custodian: S. Smith	Date: 12	3.12.06 1521
Clier	nt Sample ID Analysis Requested	d Condition	Comments/Action
Olient Info	ormed onby		cted
	ction necessary; process as is.		
	anager	Date	
	/03 Rev 5		A market and the first first the second of t

PNNL	JGL	140170
	W	Ф5078

C.O.C.#

	U\$50	78			CHAIN OF	CUSTODY/	SAMPLE ANAI	LYSIS REQUES	T	107-011-148
	OR HANFORE				·					Page <u>1</u> of <u>1</u>
Collector FLO	M.R. WEIL		,		Contact/I Dot Ste	Requester		<b>Telephone No.</b> 509-376-505		FAX
SAF No. 107-011		*********			Sampling Hanfor	origin Origin			er/Charge Code	
Project Title ISRM-LOL NOV	VEMPER 200	·				NF-N-3	506 3	Ice Chest No	Aws 115	Temp.
Shinned To (Lab)		Attornous controls	Note the second		Method o	of Shipment		Bill of Lading	Air Bill No.	:
Severn Trent Inc Protocol	corporated. Ric	bland			Govt. V		ority: 45 Days	Offsite Proper	ty No.	
CERCLA POSSIBLE SAMI ** ** Contains Ra releasable per DOE O	idioactive Materia	l at co	ncentrations that	are not regular	ted for transportation per		SPECIAL INSTRUCTION All Labs except WSCF: Batch closure of 14 days.	NS Hold Time all PNNL samples submitted under amples submitted into one SDG, da	A, G, I, S, and W 07 SA	ity Exemption: Yes V No L Fs into one SDG, not to exceed SDG
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample	Analysis		Preservative
B1L309		W	12-12-06	1226	1x20-mL P	Activity Scan	· · · · · · · · · · · · · · · · · · ·		None	
B1L309		W	4	1	1x500-mL G/P	UTOT_KPA: Urar	nium (1)		HNO3 to pH <2	
Rel <b>Pation Plan</b>	FORD Print		Sign		Date/Time   5	Received By //	Print Sign	TLF62  Date/Time	1520	Matrix *
M.R. WEI	L M	B	ller		EC 1 2 2006  Date/Time	Received By	4 S-Sm. 4	DEC 12	S = 1 SE = 1 SO = 1 SI. = 1	
Relinquished By					Date/Time	Received By		Date/Time		Oil V = Vegetation
Relinquished By				***************************************	Date/Time	Received By		Date/Time	<u> </u>	
FINAL SAMPL DISPOSITION		Aethod	(e.g., Return to	customer, per	lab procedure, used in pro	ocess)	Disposed B	y		Date/Time



Date/T	ime Received:	12.12.06 150	20		
Client:	PEW	SDG #:_We	05078 NA[]	SAF#: _2	507-011 NATI
Work		162140170			7-011-148
Shippi	ng Container ID:	RA-SAWS 115	Air Bill # 10	19	The second of th
1.	Custody Seals c	CS 13/14/06 on shipping container inta	ct?		Yes [ 7 No [ ]
2.	Custody Seals d	lated and signed?			Yes [ No [ ]
3,	Chain of Custoc	ly record present?		•	Yes [ No []
4.	Cooler temperat	ure:NA [/	5. Vermiculite/packi	no material	s is NA [] Wet [] Dry [
6.		oles in shipping container	,		S 18 18 A   Well   Dry [
7.		times exceeded?	and the processing of the control of the processing of the processing of the profession of the processing of the process	***************************************	V ( )
8.	Samples have:		4	in the	Yes[] No[]
	tape	eals .		azard labels Opropriate s	s amples labels
9.	Samples are:	ondition	le	aking ave air bubt	
10.	Sample pH takes	n? NA[] pF	H<2[] pH>2[]		
11.	Sample Location *For documenta	n, Sample Collector Lister tion only. No corrective	d? * action needed.		Yes [/ No[]
12.	Were any anoma	dies identified in sample	receipt?		Yes[] No[/
13.	Description of ar	nomalies (include sample	numbers): N	111	
***********		1)			
Sample	Custodian:	S. Smit	hDate:	12.10	1.06 1520
Clie	ent Sample ID	Analysis Requested	Condition	n	Comments/Action
Client In	formed on	БУ			A control of the second of the
	nction necessary; pr			,	
Project M	lanager		Date		
	9/03 Rev. 5				

			·····	~~~~										
PNNL 6	1140	35 18 1	<del>-</del> /		CHAI	N OF	CUSTODY/S	SAMPLE ANAI	LYSIS R	EQUEST	1			2-364
Collector FLUO	R HANFORE	, all	ue 0%	26.07		Contact/Re	- Auester		Į,	Telephone No.	MS	Page IN F	1 of	1
33	I.R. WEIL					Dot Stev	rart			509-376-5056		ur F.	AA	
SAF No. S07-012						Sampling ( Hanford			1	Purchase Order/				
Project Title SURV, DECEM	DED 2006						NF-N-5	06		Ice Chest No.	WS 115	Temp.		
Shinned To (Lah)		- AND CONTRACTOR				Method of				Bill of Lading/Ai	ir Bill No.			
Severn Trent Inc. Protocol	ornorated. Ric	hland	TO CARLO CARLO CARLO CARLO CONTRACA CARLO CA	Weenstelle determination of the property of the control of the con		Govt. Ve				Offsite Property	No	****	·	
SURV							Prio	rity: 45 Days				***************************************		
POSSIBLE SAMP  ** ** Contains Rac releasable per DOE Or	lioactive Materia	l at co	ncentrations that	are not regulate	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTION All Labs except WSCF: Batch closure of 14 days. WSCF: Batch all PNNL GW s	all PNNL sample	s submitted under A,	G, I, S, and W 07	ctivity Exempt SAFs into one:	ion: Yes to	✓ No ∟ exceed SDG
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample	e Analysis				Preservati	ve
B1LCX0		W	12-13-06	0847	1x20-mL	. P	Activity Scan				None			1
B1LCX0		W	4		1x1000-ı	mL G/P	UISO_PLATE_AE	A: List-1 (3)			HNO3 to pH <	:2		
B1LCX0		W	4		1x500-m	IL G/P	UTOT_KPA: Uran	ium (1)			HNO3 to pH <	:2		
									TLGU	5				
		1											-	
	.1			1	1	591	30/70		у		トクマハ			
Relinquished By FLUOR HANFOR M.R. WEIL	D Print	U			Date/	Time 7/ - 3 2006	Received By	Print Sig	11	Date/Time C		M = Soil	atrix *	= Drum Solid
Relinquished By					Date/	Fime ,	Received By			Date/Time	SE SO SL	= Sediment = Solid = Sludge = Water	DI, = T = WI =	= Drim Liqui = Tissue = Wine = Liquid
Relinquished By				***************************************	Date/	Time	Received By			Date/Time	0	= Water = Oil = Air	V :	= Liquid = Vegetation = Other

Date/Time

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Received By

Relinquished By

FINAL SAMPLE

DISPOSITION

Date/Time

Disposed By

1



Date/	Time Received: 13	·13.06 0930	)	
	1: Pow	SDG #: WO.	5078 _{NA[]} SAF#	507-012 NA[]
Work	Order Number: 🗸	Le L 14036488	Chain of Custody #	07-012-364
Shipp	oing Container ID: Á	AWS115	Air Bill # <u>N/A</u>	
1.	Custody Seals on	shipping container intact?	NA	A[] Yes [ No[]
2.	Custody Seals da	ted and signed?		Yes / No[]
3.	Chain of Custody	record present?	ĸ	Yes [/ No[]
4.	Cooler temperatu	re:NA [ X 5.	Vermiculite/packing mate	erials is NA / Wet[] Dry[]
6.		es in shipping container:_		· · · · · · · · · · · · · · · · · · ·
7.	Sample holding ti	mes exceeded?	N.A.	Yes[] No[]
8.	Samples have:tapecustody sea	ls .	hazard la	•
9.	Samples are:in good corbroken	dition	leaking have air l	
10.	Sample pH taken?	NA [ ] pH<	2[]/ pH>2[] pH>S	)[]
11.	Sample Location, *For documentation	Sample Collector Listed? on only. No corrective ac	* iion needed,	Yes [] No []
12.	Were any anomali	es identified in sample rec	ceipt?	Yes [ ] No [/]
13.	Description of ano	maties (include sample nu	imbers): N/B	,
Antonio	ρ	0		
Sample	e Custodian .	Smith	Date: 12-13	-06 09:30
CI	ient Sample ID	Analysis Requested	Condition	Comments/Action
T The second second	V			
Client I	nformed on	by	Person contacted	1
[ ] No	action necessary; pro-	cess as is.	,	
Project	Manager		Date	
LS-023	, 9/03, Rev. 5			

PNNL JG.	L140. U050'	29 18	17		CHAI	N OF	CUSTODY/	SAMPLE ANALY	YSIS RI	EQUEST	Γ	C.O.(		012-260
Collector	Fluor H	anfor	d ·			Contact/Re	equester		Т	elephone No.	N	ISIN	FAX	<u>1</u>
SAF No.	D. E. P/	/BCH	EN			Dot Stew Sampling (			р	_509-376-5056 urchase Order				
S07-012						Hanford	Site							
Project Title SURV, DECEM	RER 2006					Loak	mk: HN	=- N-506-4	Id	ce Chest No.	5m1-5	72 Tei	mp.	
Shinned To (Lab)		MINISTER MANAGEMENT	noneconcensiones of the second			Method of	Shipment			ill of Lading/A				
Severn Trent Inc	ornorated. Ric	hland	teresective out was supervised and			Govt. Ve		***************************************		CC 14 Th	**			-
SURV							Pric	rity: 45 Days		offsite Property	V No.			
POSSIBLE SAMP ** ** Contains Rac releasable per DOE Or	lioactive Materia	l at co	ncentrations that	are not regulat	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all closure of 14 days. WSCF: Batch all PNNL GW sam		submitted under A	x, G, I, S, and W	Activity E ' 07 SAFs ii	Exemption: Y	es No not to exceed SDG
Sample No.	Lab ID	*	Date	Time	No/Туре	Container		Sample A	malysis				Presen	vative
B1LCD3		W	12/13/06	200	1x20-ml	. P	Activity Scan				None			
B1LCD3	<del> </del>	W	10/10/03	1/1/	1x500-m	ıL G/P	UTOT_KPA: Uran	ium (1)			HNO3 to ph	1 <2	<del></del>	
`		1	<del>  V</del> -	1 V										·····
										***************************************				
		1					244,744,744	: 7/-0	6714			·····		
		1-	<u> </u>				*		25 ///					
								Name and the second sec						***************************************
				),wa	100	10(0		V-11117 E - VIII-V-11117 E - VIII-V-1117 E - VIII-V-						
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		<del>  `</del>		<b>Y</b>	101	-					<u> </u>			······
		<del>                                     </del>	\ <u>\</u>			•			m///					
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		┼	·								1			WINE
	<u> </u>	<u> </u>		<u></u>		~**************************************		,					***************************************	
Relinquished By	Print		Sign		Doto/	Time (193)	Received By	Print Sign		Date/Time	09:35	<u> </u>	34. * **	
Fluor Ha	inford /	$\bigcap$		ner	S		,	1 \ ( 17/	DEC 1	3 2006			Matrix *	
D. E. PA Relinquished By	RCHEN\		ar (	? ner	Date/	ZOOS Time	Received By	th J. Sm. th		Date/Time	S SE SO SI.		T	I. = Drum Lion = Tissue
Relinquished By	· · · · · · · · · · · · · · · · · · ·				Date/	Time	Received By			Date/Time	W O A	= Water = Oil = Air		= Liquid = Vegetation

Relinquished By Date/Time Received By Date/Time FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By DISPOSITION

Date/Time



	/Time Received: 13.13-06 0	9:35		
Clier	nt: Pow SDG#: W	05078 NA[] SA	AF#: 507-012 NA	1
Worl	k Order Number: <u>VGL 140291</u>		307-012-260	J
Shipp	ping Container ID: 5mL -56Z	Air Bill # N/19		
1.	Custody Seals on shipping container in	itact?	NA[] Yes[/ No[]	
2.	Custody Seals dated and signed?		NA[] Yes [] No[]	
3.	Chain of Custody record present?		Yes [ No [ ]	
4.	Cooler temperature:NA //	5. Vermiculite/packing t		. (1
6.	Number of samples in shipping contain	er:/	18 TA JV Wet ( ) Di	'У [ ]
7.	Sample holding times exceeded?		NA / Yes [] No []	
8.	Samples have:		N1 res[] 140[]	
	tapecustody seals	hazaı	rd labels opriate samples labels	
9,	Samples are:in good conditionbroken	leakin have		
10.	Sample pH taken? NA[]	pH<2//> pH>2[] pI		
11.	Sample Location, Sample Collector List *For documentation only. No corrective	ted? * e action needed.	Yes [] No []	
12.	Were any anomalies identified in sample	e receipt?	Yes [] No []	
13.	Description of anomalies (include samp	le numbers): 1	/	
Sample	e Custodian: A Smith	Date: 12 · 1.	306 0935	
ÇI	ient Sample ID Analysis Requested	Condition	Comments/Action	***************************************
-				
Client L	nformed onby	Person contac	Sted	
	action necessary; process as is.	- Vivon contac	* YYEN	**************************************
	Manager	Date	,	
	0/03 Pay 5	2	and the special state of the special state of the special states and the special states are special sta	W 10194

PNNL V6	L 1801 W050 Due 01 Fluor Hanford	67 18 .29	7	(	CHAI	N OF (	CUSTODY/	SAMPLE ANALY	SIS REQUI	EST	C.0		7-010-2
Collector	luor Hanford		/1			Contact/Re	quester		Telephone		MSIN	FAX	
SAF No.	R. T. SICKLE					Dot Stew Sampling C		· · · · · · · · · · · · · · · · · · ·	509-376 Purchase (		rge Code		
S07-010						Hanford :	Site		•				
Project Title SURV. OCTOB	FR 2006					1	HNF-N.	506-3	Ice Chest I	No. G PAC	15115 T	emp.	
Shinned To (Lah)	iska sapanakan karataan karatak karata	NEW CHARLES	SPATOS POR CONTRACTOR AND		entransministrative de la company	Method of	Shipment	······································	Bill of Lad	ling/Air B	ill No.		
Severn Trent In	cornorated. Ric	hland		throwant professors colored and standard and a second of	acostockacionistica de aprocession	Govt. Ve			Officia Du	- and Na	•		
Protocol SURV							Pric	ority: 45 Days	Offsite Pro	perty No.	•		
POSSIBLE SAM  ** ** Contains Ra releasable per DOE C	dioactive Materia	l at cor	centrations that	are not regulate	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PI SDG closure of 14 days. Submit invoices & deliverables to DI	•	ited under A		Exemption: Yes	
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample Ana	ılysis			Preserv	ative
B1KPD6		W	12-14-06	0923	1x20-mL		Activity Scan	*		No	ne		
B1KPD6		W	12 1400	1	3x1000-	mL P	TRITIUM_ELECT	_LSC_LL: H-3 (1)		No	ne		,
		<del>                                     </del>	<u> </u>	<b>-</b>									
		<del>                                     </del>						JLPE	- 、 ブ				
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		<u> </u>			<del> </del>								
		<u> </u>		<u></u>			1						
Relinquished By Fluor Ha R. T. SIC	nford Pring KLE	7	Sign	General States	EC 14	2006	Received By Mi	h S- Sm. H	<u>DEC 1 4 2</u>	/Time / 3 ]	S = So		S = Drum Solid , = Drum Liqui
Relinquished By			,			Time	Received By		***************************************	/Time	SO = So SL = Sh	lid T ndge Wi ater L	= Tissue
Relinquished By					Date/	LUIR	Received By		Date	ı inik	A = Ai		= Other
Relinquished By		*************			Date/	Time	Received By		Date	/Time		<u>,, , , , , , , , , , , , , , , , , , ,</u>	
FINAL SAMPI DISPOSITIO		Method	l (e.g., Return to	customer, per	lab procedur	e, used in proc	ess)	Disposed By				Date/Time	

# STL

Date/Tir	ne Received: 12 14 06 1330			
	P6W SDG#: W05078	_NA[] SAF	: #: <u></u>	07-010 NA[]
Work O	· · · · · · · · · · · · · · · · · · ·	of Custody # _		
	, and the second	11# <u>N/19</u>		
1.	Custody Seals on shipping container intact?		NA[]	Yes No[]
2.	Custody Seals dated and signed?			Yes [ No [ ]
3.	Chain of Custody record present?			Yes [ No [ ]
4.	Cooler température: NA 17 5. Vermice	ulite/packing m	aterials	s is NAT1 Wet[1Drv[1
6.	Number of samples in shipping container:			
7.	Sample holding times exceeded?	j	Na M	Yes[] No[]
8.	Samples have:			. ( ) ( )
	tapecustody seals	hazaro		amples labels
9.	Samples are:	111		
	in good condition broken	leakin have a		nles
				equiring head space)
10.	Sample pH taken? NA[] pH<2[]	pH>2// pH	[>9[]	
11.	Sample Location, Sample Collector Listed? * *For documentation only. No corrective action nee	ded.		Yes No[]
12.	Were any anomalies identified in sample receipt?			Yes[] No/
13.	Description of anomalies (include sample numbers)	:_N/p	and the second s	
**************************************			**************************************	
Sample (	Custodian: S. Smith	Date: /c	2.14	1.06 1330
Clier	nt Sample ID Analysis Requested	Condition		Comments/Action
Client Info	ormed onby	Person contact	ted	1
[ ] No ac	ction necessary; process as is.			
Project M	anager	_ Date		
1 5 003 0	/03 Pay 5			

PNNLUG L	18010	68 78		1	CHAIN (	OF CUSTODY/S	SAMPLE ANALYSIS	REQUEST	C.O.0	I07-009-
de.	U050°	9.0	7							Page <u>1</u> of <u>1</u>
Collector	Fluor H D. E. P/	anfor	d			tact/Requester		Telephone No.	MSIN	FAX
SAF No.	-w/ c (bas , [] g*	ALL SIT	CIV	· · · · · · · · · · · · · · · · · · ·		ot Stewart pling Origin		509-376-5056 Purchase Order/	Charge Code	
I07-009 Project Title				''/M		anford Site				
2UP1-LOL NOV	EMBER 2006	5				ogbook, HNF	N-506-4	Ice Chest No.	RP-03-011 Ter	np.
Shinned To (Lab) Severn Trent Inc.	contemporate contemporate (	1.11				nod of Shipment		Bill of Lading/Ai		
sevent_frent inc Protocol	отногиел, ки	:niano	THE RESIDENCE OF THE PROPERTY		GC	ovt. Vehicle	ritur 45 Dovo	Offsite Property	No.	
SURV POSSIBLE SAMP	TEHAZADI	SOME	NAADWO			Prio	rity: 45 Days   SPECIAL INSTRUCTIONS   He	l l l l l l l l l l l l l l l l l l l	TO a 1 A at 1 a	Exemption: Yes 🗹 No
** ** Contains Rac releasable per DOE Or				t are not regulat	ted for transportation	n per 49 CFR but are not	All Labs except WSCF: Batch all PNNL san closure of 14 days. WSCF: Batch all PNNL GW samples submi	•		nto one SDG, not to exceed
Sample No.	Lab ID	*	Date	Time	No/Type Conta	ainer	Sample Analysis			Preservative
B1L1X9		W	12/14/06	1114	1x20-mL P	Activity Scan			None	
B1L1X9		W	1 ' 1'	1	2x4000-mL G	G/P I129LL_SEP_LEP	S_GS_LL: I-129 (1)		None	
B1L1X9		W			2x1000-mL G	G/P C14_LSC: C-14 (1	)		None	
B1L1X9		W			1x4000-mL G	G/P GAMMALL_GS: Li	ist-1 (9)		HNO3 to pH <2	
B1L1X9		W	To and the second		1x1000-mL G	G/P NP237_LLE_PLAT	ΓΕ_ΑΕΑ:Np-237(1)		HNO3 to pH <2	
B1L1X9		W			3x1000-mL G	G/P SRISO_SEP_PRE	CIP_GPC: Sr-90 (1)		HNO3 to pH <2	
B1L1X9		W	V	V	1x500-mL P	TC99_ETVDSK_L	SC: Tc-99 (1)		HCl to pH <2	
		<del> </del>								
		╂					JLF	<u> </u>		
	+	-			a 00					
				D, W						
·				<b>K</b>	12/14/06	6				
		1			194.11		W. N			
		1		$ egthank{}$				4.		
	1.7	1								
			1		<b></b>	1345		/2	45	
Relinquished By Fluor Hanfo D. E. PARCH	rd Print	C	Sign	DE	Date/Time	Received By	Sign DEC	Date/Time	S = Soil	Matrix *
Relinquished By					Date/Time	Received By		Date/Time	SE = Sedir SO = Solid	nent DI. = Drin

= Sludge = Water = Oil = Air WI = Wine
 I. = Liquid
 V = Vegetation
 X = Other SL W O A Relinquished By Received By Date/Time Date/Time Received By Relinquished By Date/Time Date/Time FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time DISPOSITION



	e/Time Received: 10.14.06	The state of the s		
Clie	ent: Pow SDG	#: W05078 NA	[] SAF#: Z	07-009 NACO
	rk Order Number: U6218016	C.	slody # Z07	
Ship	pping Container ID: <u>GRP-03-C</u>		1	
descent .	Custody Seals on shipping conta		A	Yes [ ) No [ ]
2.	Custody Seals dated and signed?	1		Yes [ No[]
3.	Chain of Custody record present	?		
4.	Cooler température: N	A 📝 5.Vermiculite/pa	icking materials	Yes ( No [ )
6.	Number of samples in shipping o	ontainer:	and and the	o is idy N) Met i   Dry (
7.	Sample holding times exceeded?			Van Daline
8.	Samples have:			Yes[] No[]
	tape custody seals		_hazard labels _appropriate s:	
9.	Samples are:in good conditionbroken		_leaking _have air bubb	
10.	Sample pH taken? NA (	] pH<2//pH>2/		- 1 mm (16 mode space)
11.	Sample Location, Sample Collecter *For documentation only. No cor	or Listed? * rective action needed.		Yes / No[]
12.	Were any anomalies identified in	sample receipt?		Yes [] NoX]
13,	Description of anomalies (include	sample numbers): ///	<i>A</i>	
A constitution of the same of	f.		and other department of the second	
Sampl	e Custodian: A. Smi	th Date:	12-14-06	1345
CI	lient Sample ID Analysis Req	uested Condi	tion	Comments/Action
Olient L	nformed on by	Person	contacted	
	action necessary; process as is.		1	
roject	Manager	Date		
	, 9/03, Rev. 5			The second secon